

MAY 11, 1959

# PURCHASING

The Magazine for Industrial Buyers



## Purchasing at Dow Chemical's Texas Division

Start on page 69

A CONOVER-MAST PUBLICATION

SEVENTY-FIVE CENTS

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Coming June 8—Annual Value Analysis Issue



## Lasting lesson from the school of hard knocks

Cobblestones caused many a jolt before a Scotsman living in Belfast first put pneumatic tires on bicycle wheels. This smoothed the ride over rough roads, but the primitive rubber wouldn't hold up until a way was found to toughen it.

The discovery: tire life can be doubled by mixing carbon black into uncured rubber. But it wasn't easy to get semisolid gum rubber to absorb carbon black, and so a faster, cleaner way was found: carbon black was stirred into synthetic rubber in the *liquid* (latex) stage.

Today, Shell Chemical makes possible even more intimate absorption of carbon black with a *new, high-speed* mixing method. The result: a better, more convenient rubber for tire makers . . . tires wear longer than ever.

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B.F.Goodrich



## Machine swallows wire, spits out nails

*B.F.Goodrich improvements in rubber brought extra savings*

**Problem:** That machine takes wire from big coils, forms it into nails, then spits them out against a rubber belt with magnets behind it. Up the nails go and into a cart to be wheeled away. But when plain rubber belting was used, the nails would slip, slide, fall back down. Belts lasted only two or three months.

**What was done:** Then a B.F.Goodrich man recommended the Gritpore belt developed by B.F.Goodrich for conveyors operating at steep angles.

Parallel ribs of rubber, spaced four to the inch, are molded into the belt to give it extra gripping power.

**Savings:** The B.F.Goodrich Gritpore belt was tried. The combination of rubber ribs and magnets holds the nails firmly so they move almost straight up with no backsiding. Each of the B.F.Goodrich belts lasts about a year—four or five times longer than the belts previously used.

**Extra benefits:** This B.F.Goodrich belt is now being used in many plants

for moving packaged goods up or down steep inclines. It handles everything from tiny boxes to huge cartons, as well as a mixture of light and heavy packages.

**Where to buy:** Your B.F.Goodrich distributor has complete information on the B.F.Goodrich conveyor belt described here. And, as a factory-trained specialist in rubber products, he can answer your questions about all the rubber products B.F.Goodrich makes for industry. *B.F.Goodrich Industrial Products Company, Dept. M-582, Akron 18, Ohio.*

# B.F.Goodrich *industrial rubber products*

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# PURCHASING

The Methods and News Magazine For Industrial Buyers

MAY 11, 1959  
VOLUME 46, No. 10

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*Chairman of the Board*

B. P. MAST, JR.  
*President*

RAY RICHARDS  
*Publisher*

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NOTHING LIKE NEW GOODYEAR



## -for positive assurance of quality in maximum-efficiency belts

*With Goodyear quality Positive Drive Belts now at your disposal, you're free to explore all these new avenues in machine or appliance design—*



**SMALLER SIZE**—With Goodyear Positive Drive Belts, you can use smaller pulleys—shorter centers—narrower belts of higher capacities. Center distance can be permanently established.



**LIGHTER WEIGHT**—With their high horsepower-to-weight ratio, Goodyear Positive Drive Belts are ideal for portable tools, machines and aircraft assemblies. Pulleys can be light plastics or alloys.



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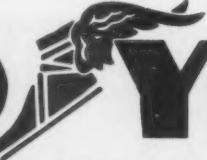
**GREATER PRECISION**—With Goodyear Positive Drive Belts, backlash is virtually eliminated. In fact, they frequently outperform fine precision gear drives.

And remember—Positive Drive Belts are designed and built to the famed Goodyear high standards of quality. For full details on belts for drives from fractional to 600 H.P.—for speeds up to 16,000 f.p.m.,

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Goodyear Positive Drive Belts are manufactured under license and according to U. S. Patents 2,507,852 and 2,397,312.

POSITIVE DRIVE BELTS BY

**GOOD**  **YEAR**  
THE GREATEST NAME IN RUBBER

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## Purchasing Previews

### Straws in the Trade Wind

► **CONSTRUCTION SHORTCUT**—Refrigeration is a new technique being used to solve some odd construction problems. In one case, work had to be stopped on an underground tunnel because of quicksand. The solution: plastic refrigeration tubes were used to freeze the quicksand. Another example: by freezing a section of a small river (in the same manner), 18 miles were cut off the route construction trucks had to travel to get to the work site. The trucks just took a shortcut across the ice instead of going miles out of the way to the nearest bridge.

► **TEACHING SALES MANAGERS A LESSON**—The recession taught purchasing agents many things—and sales managers also got a few tips. For instance, the "hard sell" requirements of '57-'58 uncovered many ineffectual salesmen who were just drifting along with the tide in good times. As a result, many of the "order-takers" have been weeded out.

► **FOREIGN TRADE SLACKENS**—Trade with foreign countries in 1958 dropped off from the previous year. Exports fell to \$17.9 billion from \$20.9 billion in 1957, while imports slipped to \$12.8 billion from \$13.0 billion. In the first three months of 1959, exports were off even more. First quarter exports were almost \$400 million less than the similar period of 1958.

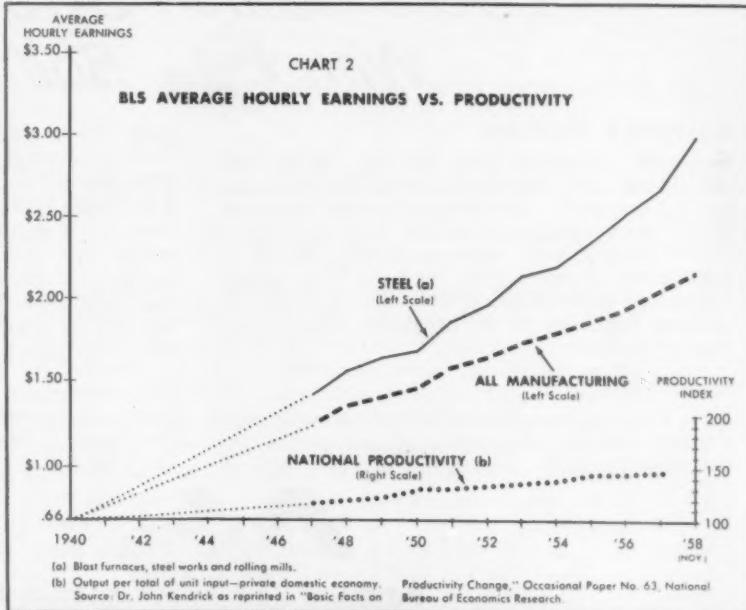
► **STRONG STRUCTURAL DEMAND**—Orders from purchasing agents for structural steel jumped sharply in February. Bookings were 25% higher than January and a whopping 170% above February 1958, says Standard & Poor's. These new orders forecast heavy construction several months in advance.

#### For the P.A.'s Hot File . . .

The Interstate Commerce Commission has good news for purchasing agents who belong to cooperative shipping associations. Intensive efforts were made to stop these groups from obtaining the advantages of carload rates—based on a 30,000 pound minimum. However, the ICC has decided to retain the favorable tariff provisions. A contrary decision would have meant increased transportation costs for many P.A.'s.

► **SECOND HALF OUTLOOK**—Here are a few quick forecasts for the last six months of 1959: unemployment will remain relatively high; new plant and equipment expenditures will rise moderately; and prices will start to creep upward starting in the third quarter.

(Turn Page)



One of the points sure to be mentioned in the upcoming steel wage negotiations is the average earnings of steelworkers. According to government statistics, the hourly wage of steelworkers is about 83 cents more than the average for all manufacturing industries.



## CASE HISTORIES



Two precision ball bearings, one concentric within the other, are periodically rotated in alternating directions during operation—thus reducing random drift to 0.25 degree per hour.

Photo: courtesy Sperry Gyroscope Co.

### 1200% Gain In Gyro Accuracy With Ball Bearings

#### CUSTOMER PROBLEM:

Get new, advanced gyro bearing design "off the board" and into production. Sperry Gyroscope Company, in developing its new Rotorace (TM) gyro, designed a special bearing capable of "averaging out" error-producing effects of friction on sensitive gyro gimbals. New manufacturing techniques would be required to achieve high degree of precision required by Sperry design.

#### SOLUTION:

N/D Engineering, when approached by Sperry, created special manufacturing techniques for the high precision production of these unique

piggy-back gimbal ball bearings. Used in the Rotorace design, the bearings helped achieve reduction of the gyro's random drift rate. The 2 or 3 deg. per hour drift, recently considered very good, is now cut to as little as 0.25 deg. per hour, with still lower rates in sight. Another example of New Departure's ability to meet exacting instrument bearing requirements through broad engineering experience and precision manufacturing techniques.

For immediate engineering analysis of your current high precision instrument and miniature ball bearing problems, write New Departure, Department V-5.

**NEW  DEPARTURE**  
DIVISION OF GENERAL MOTORS, BRISTOL, CONN.  
NOTHING ROLLS LIKE A BALL

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## Purchasing Previews

### Straws in the Trade Wind

► **FEWER FAILURES**—Business failures this year are down from 1958. Through the first four weeks in April, average weekly failures were 293 in 1959, compared to 324 last year. Failures were fewer in six of nine geographic regions in the country; the only appreciable increase was on the Pacific Coast.

► **INDUSTRY PROFITS**—The industry with the largest percent return on net assets last year was drugs and medicines. Companies in that group earned 21.9%—almost 13% greater than the average for all firms. Cement companies made the greatest percentage profit on net sales, 16.1%—over 10% more than the average. These figures come from a breakdown made by the First National City Bank of New York.

► **POSTAL ECONOMIES**—The recent increase in postal rates hiked the annual mailing bill of business to \$2.4 billion. However, many companies have set up cost-cutting measures to offset the rise, says Dun & Bradstreet. Among them: mechanizing mailroom operations, training typists to be more productive, and using less expensive types of mailing.

► **UP AND DOWN**—An important price cut and an equally important price rise were made recently. American Can Co. dropped the price of metal cans for the second time in three months. The cuts ranged from \$1.40 to \$2.58 per thousand. On the up side, American Viscose Corp. hiked prices of rayon staple fiber—the first increase in almost two years.

► **RENEGOTIATED CONTRACTS**—Bipartisan support on the House Small Business Committee has cropped up for a proposal to exempt small businesses from the provisions of the renegotiation law. But the Defense Department is against the measure. It says: "profits otherwise excessive do not cease to be excessive merely because they are obtained by small business concerns."

► **TREADING WATER**—If you earned \$5000 a year in 1939, how much must you earn this year to have the same purchasing power? According to the National Industrial Conference Board, it would take an income of \$12,113. The reasons, of course, are increased taxes and inflation.

### QUOTE! .....



Eliot Janeway

A warning to purchasing agents now speculating in inventory has been voiced by economist Eliot Janeway, Janeway Research Corporation. "Despite the Administration's sugary satisfaction with the March labor statistics, unemployment still has not fallen enough to justify the current scramble for inventory," Janeway says. He urges P.A.'s to remember the lesson of 1937—the first big year of speculative revival after the depression—when "a major speculative run-up in inventory buying" did not pay off "because overall business conditions were not good enough."

# Look what paper is doing now:

- \* Pushbutton hot cocoa
- \* Saves metal dies
- \* Ideas for design engineers
- \* Now it's the "cocoa break!" This unique vending machine dispenses little packets of Nestle's cocoa.



Standard fountain supplies hot water. Flavor and freshness are assured by printed Pouchpak\*, one of Riegel's tailor-made protective papers for packaging. \*TM

\* In the perforating and pinking of shoe leather, a special paper is used as a backing sheet. The paper protects the sensitive dies from injury as they cut through the leather to the paper cushion. It's a high density grade that's tailor-made for the job by Riegel. An idea here for you?

\* Design engineers note: Ever think of paper as a leading engineering material? For things like auto battery separators, electronic coil forms, "throwaway" elements for oil filters, printing plates, trays,



covers, etc.? All these are now being made of special Riegel plastic impregnated papers. Our experience and unusual equipment can solve many problems for you too. Write to Riegel Paper Corporation, P. O. Box 250, New York 16, N. Y.

- \* Tells who's where, who's who
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Riegel helps make the index a success by supplying the long-lasting pressboard cards that keep essential phone numbers and addresses clear and legible in spite of rough and tough pocket wear.

\* Jewel's delicious frosting mix guarantees "money back with a smile." And Riegel's Pouchpak\*



helps keep "customers with a smile." This special packaging paper locks in delicate flavors, protects fluffy ingredients, keeps fine powders from sifting out. It's engineered packaging by Riegel. \*T. M.

\* "Send me a couple of pages of glue!" That sounds strange, but it's happening every day, now, thanks to a new pressure-sensitive adhesive film that sticks to almost everything. Fortunately, there's one thing it doesn't stick to: Riegelease, a special Riegel release paper that peels off the film with no trouble at all.

\* When you're stuck with a problem, one of Riegel's 600 different kinds of paper may help. Write Riegel Paper Corporation, P. O. Box 250, New York 16.

- \* Friendly bacteria
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- \* Hi-Fi's pear-shaped tones
- \* Now you can un-clog drains with no splash or strain, thanks to Drain-Aid. It's a new bacteria-enzyme



formula, protected by Riegel's Pouchpak\*...a special pouch paper laminated to foil, then printed and polyethylene coated. A packaging idea here for your products? \*T.M.

\* Precious moments recorded on color photographic film are preserved in paper photomounts. Made of a special Riegel heat-seal-coated paper that is strong and rigid, and die-cuts cleanly.

\* Voice coils for hi-fi speakers call for unusual precision in materials.



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\* Paper made of glass or nylon... paper that holds water but lets air pass...paper you can't tear...these are also examples of Riegel's ability to make paper for almost any industrial need. Whenever you have a paper problem, write to Riegel Paper Corp., P.O. Box 250, New York 16.

Now...what can we do for you!

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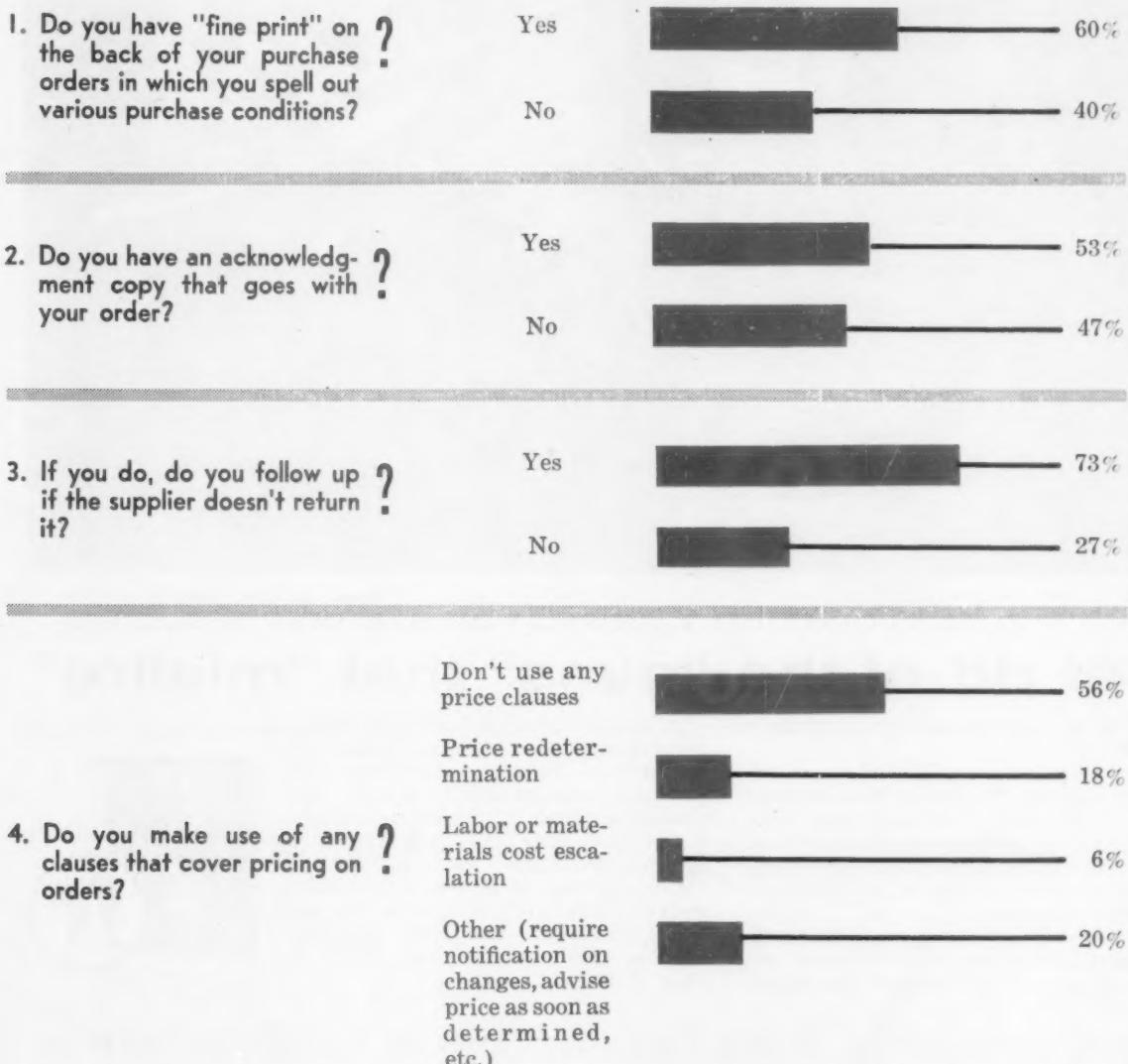
**TECHNICAL PAPERS FOR INDUSTRY**

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# PURCHASING OPINION

## How "Legal" Should Purchase Orders Be?

Many companies incorporate a number of terms and conditions on the back of their purchase orders. Yet most P.A.'s agree that if you can't trust a supplier, you shouldn't be doing business with him. This brings up the question: how much do buyers and sellers actually worry about the contractual phases of purchasing? We asked a representative cross-section of purchasing agents a number of questions about this. Their combined answers follow:





TEXACO ORGANIZED LUBRICATION CAN HELP YOU...

## Get rid of the "guns" that "misfire"

Here's how to cut purchasing costs as much as 80%:

You used to need a different grease for nearly every job. That meant 20 or 30 lubricants in the plant. Purchasing costs were high; inventory and handling expenses were heavy. Furthermore, misapplication—sometimes—was almost inevitable, with damaged machinery the result.

Unless you're operating on the basis of a modern lubrication survey, the chances are that this situation still exists in your plant!

A Texaco Organized Lubrication Plan—using recently developed *multi-purpose* oils and greases—can reduce your inventory and purchasing costs by as much as 80%—and virtually eliminate misapplication dangers.

Get the details on Texaco Organized Lubrication. Contact your local Texaco Lubrication Engineer or write for "Management Practices that Control Costs via Organized Lubrication." The Texas Company, 135 East 42nd Street, New York 17, N. Y., Dept. P-100.



## LUBRICATION IS A MAJOR FACTOR IN COST CONTROL

For More Information Write No. 160 on Inquiry Card—Page 32

## Purchasing Opinion

5. If you have clauses permitting price adjustments, do you customarily:

Negotiate to reduce the amount of the registered increase



51%

Insist on cost breakdowns to substantiate any increase



39%

Audit supplier's accounting records



10%

6. Do you ever award purchase orders on a cost-plus or cost-plus fixed fee basis?

Yes



37%

No



63%

7. Do you bother to reconcile the "fine print" on the acknowledgment forms many suppliers use with the "fine print" on your own purchase orders?

Yes



39%

No



61%

8. Do you believe that most suppliers who insist upon some sort of price escalation could just as readily anticipate their costs and quote firm prices?

Yes



91%

No



9%

On your purchase orders...

SHIP VIA  
P. O. No. 92611  
D.C. All the way!

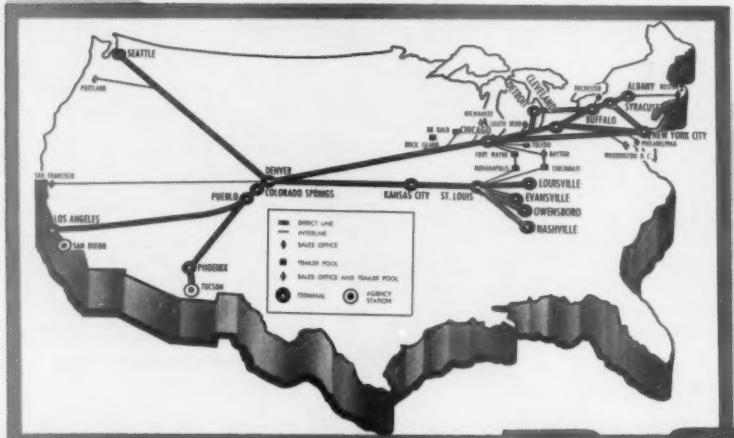
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PURCHASING AGENT

Specify **D-C**

**THE ONLY DIRECT  
COAST-TO-COAST CARRIER!**

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with NON-STOP, 2-MAN SLEEPER CABS*

*coast-to-coast!*



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Los Angeles, Cal.      Syracuse, New York

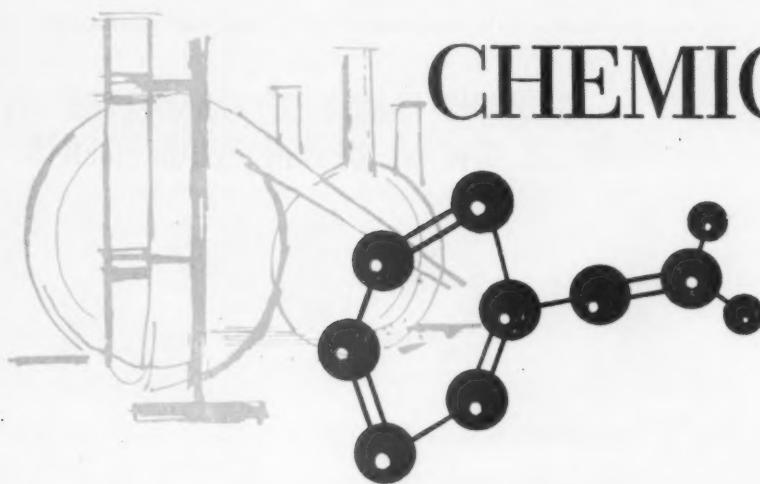
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# CHEMICALS



Chemical output is snapping back from the lows of last year. New products and technological advances in the industry will confront the P.A. in 1959.

FOR CHEMICAL companies 1959 is shaping up as a banner year. Industry sales are expected to hit an all-time high, probably between \$24.5 billion and \$25.5 billion—a gain of 6% to 10% over last year. Both sales and output have already snapped back from the recession lows of early last year to score new records in recent months.

Inventories, moreover, seem to be under better control. Chemical stocks, after seasonal adjustments, now amount to slightly less than two months sales. This is relatively high, but is under the peak monthly stock-to-sales ratio of 2.2 hit during last year's first quarter.

Earnings have recovered even more sharply and now compare favorably with the excellent results recorded two and three years ago. Chemical firms are reaping the rewards not only of increased volume but also of increased efficiency. This efficiency stems from scores of new plants and the widespread modernization and cost reduction programs in-

stituted in the past couple of years.

#### **The Overcapacity Problem**

With the business climate looking brighter and demand for chemical products on the upswing, the industry is in a stronger position this year to keep its prices firm. It might even raise them to protect profit margins against the inroads of rising costs.

There is another side to the supply-demand coin, of course. Overcapacity continues to plague most major product areas. Plastics, fertilizer materials, sulfur, sulfuric acid, and most petrochemicals are just a few of the products that have run into pricing problems because of excess supply.

Apparently over-capacity is a problem that will not quickly right itself. Therefore, chemical companies are beating the bushes harder than ever before in search of new customers and new uses for their products.

Increased competition is a close-

ly related problem. Firms from other fields—petroleum, rubber, paper, food processing, and metals industries—have jumped on the chemical bandwagon in increasing numbers. Overseas competition is cropping up more frequently, especially in export markets. And within the industry itself, a raft of new products are slugging it out in the market place with well-established materials. Some of these new products are antibiotics, vitamins, and polyethylene plastic.

#### **Mounting Production Costs**

Nevertheless, there will probably be a rising price trend for a certain group of industrial chemicals over the rest of 1959. To purchasing agents who buy these chemicals this might indicate, as Wall Street letter writers might put it, that "commitments on the long side should not be too long deferred."

For chemical prices generally have failed to keep pace with the overall rise in wholesale commodities in the past few years. This

# Bearing Buying Guide

NO. 3



A REPORT ON FAFNIR BEARING DEVELOPMENTS AND DISTRIBUTION ACTIVITIES

## CLOSE CONTROL OF ORDERING PROCEDURE HELPS EXPEDITE CUSTOMER DELIVERIES

One of the all-important facets of Fafnir service to ball bearing users is the system by which orders are received, scheduled for production, filled, and finally shipped to customers.

On-schedule deliveries play a large part in customer satisfaction and good will. To help insure prompt, accurate handling of orders, Fafnir maintains constant vigilance over order processing procedures.

Letters of instruction from the Home Office, for example, keep Fafnir salesmen continually posted on correct ordering practice—how to handle order changes; the importance of complete, accurate order entering, editing, coding, addressing, and many other essential details that add up to efficient order processing and accurate on-schedule deliveries.

The result is better service for you.

## SOLID BASE DESIGN OF LAKH PILLOW BLOCK PROVIDES EXTRA STRENGTH

Designed for standard duty applications, Fafnir's LAKH pillow blocks feature unusually sturdy housings.

Base and feet are of solid (not cored) cast iron, providing extra strength in the bolt-hole area. Base and bearing seat are smoothly machined.

The LAKH is built to interchange with similar units of other manufacture, often permitting cost savings in "over-bearinged" applications.



Block  
LAKH  
Pillow

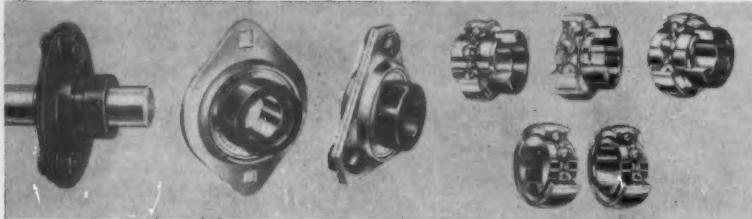
## FAFNIR ISSUES NEW CATALOG OF POWER TRANSMISSION UNITS

Users of ball bearing power transmission units are invited to send for Fafnir's new catalog of units equipped with Fafnir wide inner ring ball bearings and self-locking collars. Write The Fafnir Bearing Company, New Britain, Connecticut.

**FAFNIR**  
BALL BEARINGS

MOST COMPLETE LINE IN AMERICA

## GROWING FAMILY OF FLANGETTES MEETS DIVERSE DESIGN REQUIREMENTS



Three-bolt Flangette and newer, two-bolt and triangular Flangettes, with types of bearings available. Bearings include RR and RA types (Ply-Seal); LL type (Mechani-Seal), and Tri-Ply-Seal.

The original Fafnir Flangette, introduced little more than a decade ago, offered farm machinery makers the first, low-cost precision ball bearing "package". This single bearing development led to widespread adoption of antifriction design in farm equipment. Millions of Flangettes have now been put into service.

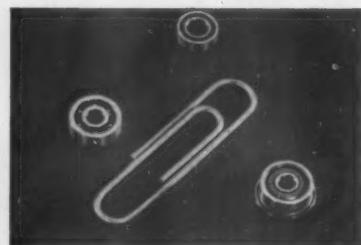
Today, the Flangette is available in a whole family of shapes and sizes, with various types of sealed ball bearings. Manufacturers not only of farm machinery but a variety of other industrial machinery requiring ball bearing units find Flangettes offer cost-cutting answers to diverse space, design, speed, and service requirements.

Development of the Flangette family is a direct result of Fafnir's teamwork approach to the needs of ball bearing users, and intimate knowledge of design

problems. Two bolt and triangular Flangettes, for example, may be used where space would not permit installation of circular Flangettes. A choice of ball bearing seals also broadens Flangette applications. Slinger-type Mechani-Seals (LL series) provide frictionless protection where shaft speeds are high. Contact-type Ply-Seals (RA and RR series) are designed for slow-to-moderate speeds and severe conditions.

Whatever the housing design or ball bearing type, however, all Flangettes offer the same economical, easy-to-install features... integral seal ball bearing; sturdy, self-contained, bolt-on housing; and the Fafnir-originated self-locking collar for quick, easy, positive bearing installation. No shaft shoulders or mounting accessories are needed, and bearing is self-aligning during mounting.

## VACUUM MELT 440C STAINLESS STEEL USED IN MINIATURE SERIES



Fafnir Miniature Ball Bearings

Use of vacuum melted AISI 440C stainless steel in Fafnir Miniature ball bearings offers manufacturers of instruments and precision mechanisms several important advantages.

Chief among these is the absence of pits and inclusions in bearing balls and raceways. This extra-clean steel provides a superior finish that results in supersensitive bearings with low torque values.

A high carbon, high chromium steel, 440C is also an ideal material where bearings may be exposed to humid or mildly corrosive conditions. Fafnir heat treating and refrigeration insure dimensional stability at temperatures ranging from  $-315^{\circ}$  to  $600^{\circ}\text{F}$ .

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### Special Industry Report:

Many industrial chemical prices will increase during 1959 . . .

year, however, the pressure for price increases may be too great to be held down any longer.

Actually, chemical prices do not move in unison. Quite a number of them have moved downward over the years and still do for the reasons already mentioned: foreign competition, overcapacity, and technological and manufacturing improvements.

For example, just recently Dow Corning Corporation announced reductions in the price of its Antifoam B silicone defoamer. The cut ranges from three to six cents a pound—approximately 5%.

And Callery Chemical Company dropped the price of sodium hydride. This chemical—useful for drying—is a highly reactive condensing and reducing agent.

However, it is in the industrial chemical group that most of the price increases will take place. Why? Advancing costs at the manufacturing plant, in transportation, and in handling. This situation has become so acute that it recently moved du Pont to warn of the prospect of a return of wage-cost-price inflation.

Advancing technology in the industry was once able to hold cost increases in check. This is no longer true.

Thus far in 1959 there have been some major chemical market advances due to costs getting out of hand. Among them are methanol, raw material for formaldehyde—a basic material in plastics; sodium nitrate, a nitrogen fertilizer; creosote oil, preservative for wood railway ties and poles; benzaldehyde, an industrial solvent and flavoring product; and sodium metal, vital in the processing of tetraethyl antiknock fluid.

In some instances, only small lot or less than carload prices have been increased. Acetone illustrates this development. Acetone is employed in the synthesis of acetic anhydride, a building block in making acetate fiber, plastics, and aspirin. It is also a widely utilized solvent for paints and lacquers.

Tank car quantities of acetone today cost 8½ cents per pound. However, drum quantities in carloads are quoted at 11 cents, and drums in less than carloads at 12½ cents. The 4-cent spread between tank cars and small drum quantities was once 2½ cents.

Chemical companies operate large tank car fleets for the shipment of its liquid and liquified chemicals. These cars are employed in moving ammonia, acids, liquid caustic, chlorine, alcohol, and other solvents.

Now trucks and tank trucks are being used on an increasing scale for the same purpose. There was a time when buyers of anhydrous ammonia—the basic chemical in nitrogen fertilizers—were allowed five days unloading time. Today it is 30 days.

#### A Revolution in Detroit

The impact of technology and new ways of doing things affect the consumption of chemicals as well as prices. A dynamic illustration is the revolution currently under way in automobile finishes. For years these products had been based on nitrocellulose and phthalic alkyd resins.

Car manufacturers are now swinging over to other materials. Primer coats are based on epoxy resins. The finishes are other resins, principally acrylics and mel-

amines. With these more durable finishes, no waxing or polishing is necessary for three years.

This changeover will eventually deal a blow to those vendors who have been supplying the alkyd resins and the intermediate product in alkyds, phthalic anhydride. Displacement of nitrocellulose lacquers may adversely effect that product as well as the solvent ethyl acetate.

#### Change in Dyes

Another important change involves dyes, the chemical industry's highly complex organic products. There is a growing use—at present confined mostly to rayon—of "spin dyeing." In this new process, the pigments and fibers are utilized in finely divided form, providing a fastness of color not usually obtainable with dyes.

In the synthetic organic chemical group, which has undergone considerable development in recent years, dyes advanced 47% during the 10-year period 1948-1957. They have moved up from an average of 88 cents per pound during this period to an average of \$1.29. Rubber processing chemicals gained 25% during the same 10-year span; synthetic rubber, 17%; and medicinal chemicals, 11%.

Chemical price declines in that period have been led by surface active agents, down 41%; and by plasticizers, down 22%. Surface active agents are mostly detergents, while plasticizers have an essential role in molding and processing plastics.—By David M. Kiefer and Harry Stenerson, American Chemical Society Applied Publications.



This late model emission-type spectrograph can give direct dial readings on as many as 20 different chemical elements in testing the composition of a special steel alloy.

## Latest laboratory equipment speeds quality control at Standard

Installed in the Metallurgical Laboratory at Standard Steel Works are the latest scientific testing instruments for the most accurate and rapid testing of steels in all stages of production. Samples are delivered by pneumatic tube from melting furnace to laboratory in 90 seconds. Using the spectrograph pictured above, analyses can be determined in 1½ minutes, saving hours of time over older methods.

Standard's recently installed electric furnace and vacuum degassing equipment assure delivery on special alloy products in the shortest possible time. Standard's quality control procedure guarantees that your most exacting requirements will be met. Write Dept. 5-E for details.



There is a specific refraction index to fluorescent X-rays for each metal, and this latest, most interesting use of them is employed to determine the composition of certain stainless and other high-alloy steels.

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holds container upright at any pulling angle for easy moving over rough ground, indoors over rough floors, even up and down steps!

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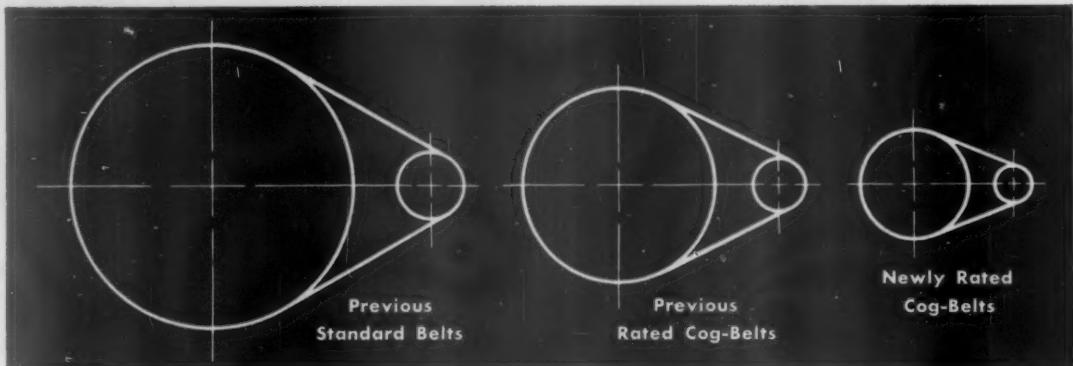
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Higher HP Dayton Cog-Belts offer today's biggest savings in Cost,



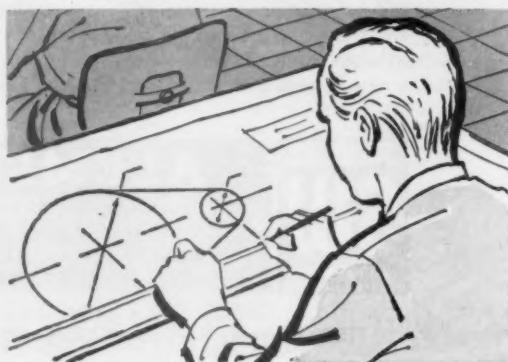
The Dayton Rubber Company proudly announces the findings of the most extensive, thorough analysis project in the V-Belt power transmission field, during which literally hundreds of thousands of V-Belt drives were evaluated by a renowned, independent engineering laboratory.

This long-term project was initiated because Dayton Cog-Belt performance had been noticeably upgraded over a period of years, through continued research and development in new materials and improved features... indicating that heretofore established HP ratings have become obsolete.

**The result:** Important new increases in Dayton Cog-Belt horsepower ratings... now 2 to 3 times higher than previous standard V-Belt ratings.

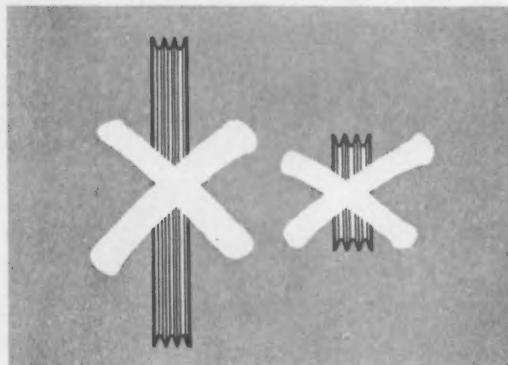
### For the V-Belt drive designer... New Compactness, Lightness, Economy.

Dayton Cog-Belts, delivering 2 to 3 times more horsepower, permit drive designers to use narrower sheaves, less grooves, fewer belts for any V-Belt drive. *Two Cog-Belts do the work of 4 to 6 previous standard V-Belts.* Drive space thus saved permits new compactness of design, lighter weight and lower cost... job-proven on thousands of power drives throughout all industry. First costs and maintenance costs can be substantially reduced with Dayton Cog-Belt drives.



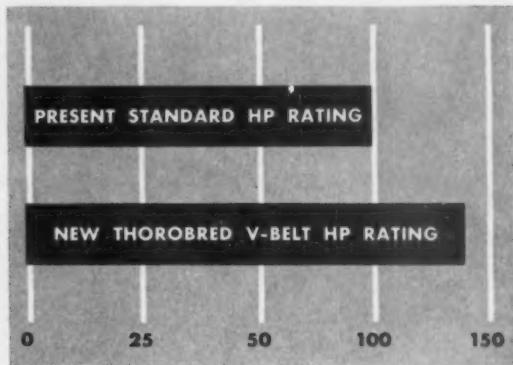
# Horsepower Capacity previous Standard Belt Ratings

Drive Space, Weight . . . using *existing industry-standard sheaves*.



**No special sheaves required . . .  
Existing sheave stocks usable.**

Using long-accepted industry-standard sheaves, *Dayton Cog-Belts do not obsolete present stocks of sheaves . . .* drives can be assembled from any existing inventories. Newly-rated Dayton Cog-Belts permit use of sheaves with smaller diameters and comparably closer centers . . . always at a savings in cost and weight. Because Dayton Cog-Belts operate on industry-standard sheaves, there is no need to stock additional special sizes. Present inventory stocks allow you to cover a greater range of higher horsepower capacities.



**HP Ratings on Dayton Thorobred  
V-Belts also substantially increased.**

Dayton Thorobred V-Belts, through similarly evolved improvements in materials and research, are now also officially increased in horsepower capacity—40% more than previous standard ratings. Five Dayton Thorobreds now do the work of seven standard-rated V-Belts. Here again are important increases in power drive capabilities and cost reductions! With these new ratings, the Dayton Thorobred is unquestionably the leading performer of all standard-type industrial V-Belts.

*Write for new brochure showing how designers can calculate Dayton Cog-Belt drives by referring to existing drive selection tables in Dayton's #280-B Handbook of V-Belt Drive Design. See "Belting" in the yellow pages of your telephone directory for the name of your nearest Dayton Distributor or write Dayton Industrial Products Company, Division of The Dayton Rubber Company, Dayton 1, Ohio.*

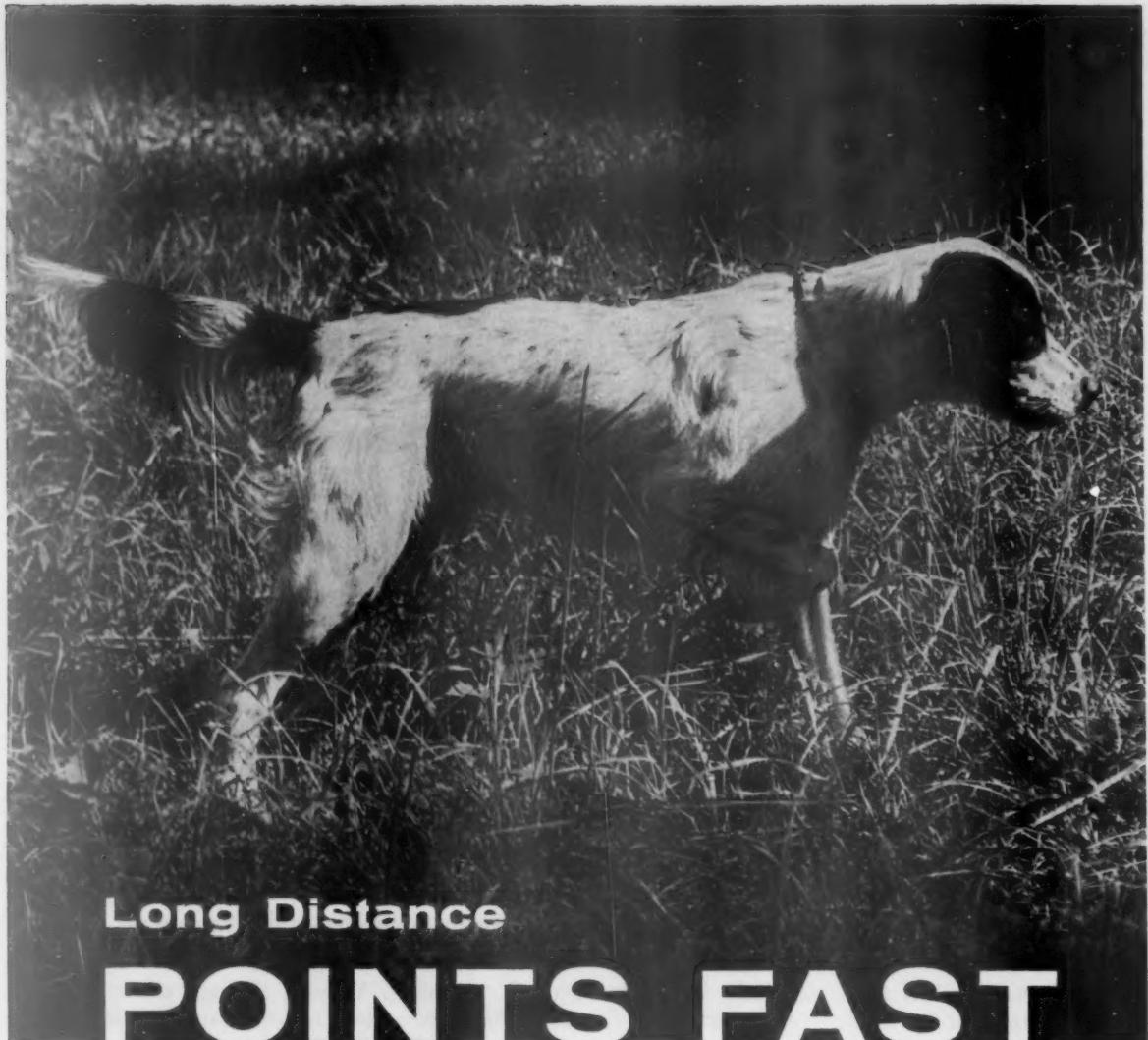
*Utilize over 30 years of time proven Dayton quality,  
research and engineering in your V-Belt drive design.*



**Dayton Industrial Products Co.**

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## Washington Report

### Administration Seeks to Hold Wage, Price Lines

With a strike, or without one, the view in Washington is that the wage settlement in the steel industry will be mild. Prices will probably be held steady, with either a token increase or none at all.

A strike, if it comes, would be more in the nature of "an informal vacation" than a grim economic battle. Both management and labor are uneasy over the upcoming wage talks. Public reaction has been critical. Little sympathy has been shown toward the demand for higher wages in steel. And consumers are against price increases.

All signs point to continued economic recovery. Gross National Product is moving ahead of the all-time peak of '57. The first quarter '59 figure was \$460.4 billion, and it looks like GNP will at least hit \$470 billion by mid-year. The Federal Reserve production index has also been increasing. Employment has improved, while the cost of living has been steady.

The White House has thrown its weight strongly behind a "hold the line" policy during the steel wage negotiations. The Administration position is that if wages and prices are held, greater recovery will come more quickly. If wages and prices are permitted to rise and spending is pushed up, however, it feels the result will be higher prices, with little increase in employment.

The recent signs of economic lift are taken as a justification of the Administration program. The White House approach is that a moderate settlement in steel is the first line of defense against inflation.

#### • Gov't. Seeks Method To Cut Stockpiles

The government is holding large quantities of materials over and above the stockpiling objectives. It is looking for a way to

gradually dispose of these holdings to industry.

The materials were acquired under the Defense Production Act, under which the government gave producers special incentives to expand their output. One of these incentives was a guaranteed price.

The procedure was for the government (through the Office of Civilian and Defense Mobilization) to buy the materials as offered, and then transfer them to the strategic stockpile. Once in the stockpile, the materials were "locked up," and could not be resold.

When the stockpile objectives were reduced from a five-year requirement level to a three-year level, little additional metal was needed. In copper, for example, at the end of 1958, the open market price was above the floor price in the government contracts, and very few sales of the red metal were made.

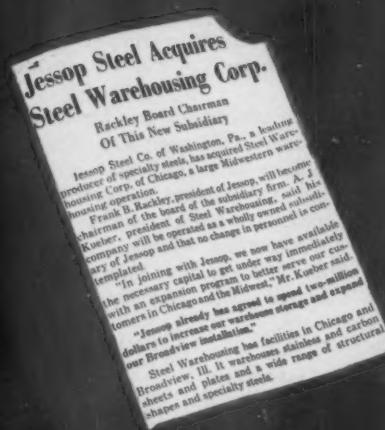
The tonnages of material in the stockpile are in no way restricted against resale. The only restriction is the announced policy of OCDM "to exercise great care" so as not to "disrupt the market or adversely affect the industry involved."

The amount of material involved has increased to a point where any sizable sales would definitely affect the market. In fact, in some instances these sales could break the market.

An OCDM proposal to release small quantities of copper created a storm of protest among Congressmen from mining states, and some quick reaction on the U. S. and London spot copper markets. The talk about releasing copper was in the nature of a trial balloon, with the idea that copper could be trickled out at a rate of not more 5,000 tons a month. If this plan proved feasible, the government thought that other "surplus" materials could also be



U. S. Steel's chairman, Roger M. Blough, told the Senate Antitrust Subcommittee that he could "see no reason for wages or prices to go up this year." He testified against legislation that would require companies in heavily concentrated industries to notify the government of their intention to raise prices.



## Jessop buys Steel Warehousing Corporation ...another reason for your confidence!

When you specify Jessop specialty steels, you've got good reasons for that decision. For example . . .

**With Jessop, you're dealing with success.** Although it's only two years since the acquisition of Green River Steel, Jessop now adds Steel Warehousing of Chicago. Already a two million dollar expansion of warehousing facilities is underway.

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# Washington Report

Advertisement

## • Bulletin No. 13

sold at a slow rate. However, it appears that the Administration is bowing to Congressional pressure and will table the proposal for the foreseeable future.

### • Transportation Study Now Being Prepared

A transportation study is underway in the Department of Commerce. A group there is under instructions from President Eisenhower to come up with legislative and administrative proposals that may be needed to bring our transportation system into balance.

The Administration view is that during World War II and the post-war period, the government has taken actions to meet emergency problems of the highway, railway, aviation, and maritime industries. Many of these actions have involved federal subsidies and special government aids.

The government machinery for regulation and control of transportation has become a labyrinth. Railroads, motor carriers, freight forwarders, and pipelines are operated by private industry, while the highway network comes under federal, state, and local governments.

The inland waterway carriers and ocean shipping are generally operated by private industry, whereas the construction, maintenance, and operation of the waterways and ports are usually fostered and promoted by government. Air carriers are operated by private industry, yet airways and airports are a government responsibility.

In the regulatory field there is the Civil Aeronautics Board, Interstate Commerce Commission, and Maritime Board. Promoting the development of transport facilities are the Board of Rivers and Harbors of the Corps of Engineers, Department of the Army, Bureau of Public Roads, Maritime Administration, St. Lawrence Seaway Authority, and the Federal Aviation Agency.

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MAY 11, 1959

A report with recommendations is expected by mid- or late summer and will be forwarded to the White House. There it will be decided what should be done administratively and whether legislation should be prepared and sent to Congress.

### • European Countries Attract U. S. Capital

U. S. manufacturers are taking a closer look at the European Common Market countries, with a view toward establishing subsidiaries or licensing arrangements with existing firms there.

Bureau of Foreign Commerce analysts, who specialize in the Common Market countries, told PURCHASING Magazine that the Low Countries—Belgium, Netherlands, and (to a lesser extent) Luxembourg—are making a determined effort to attract U. S. capital. Roughly 40% of Belgium's industrial output is exported, and the Netherlands exports about 35% of its output. To stay in business, these countries have to produce cheaply and in large volume.

Italy is making some effort to attract U. S. investor interest. France is also making a bid for American participation, but there is still a considerable question about the stability of France's economic position.

West Germany feels that it can pretty much go it alone. It has enough money and managerial talent and believes that it doesn't need American help.

Some of the output of U. S. subsidiary plants in Europe has been trickling back to the American market, but as the Common Market countries develop—and with tariff barriers down—they will generate enough demand to take virtually all the expanded product. While there will still be some European goods coming into the U. S., the government forecast is that the needs of the Common Market will also expand U. S. exports to those countries.

## Investment Casting News

From Hitchiner

Newest casting wrinkle that has substantially reduced the costs of many parts is our newly developed shell process. Behind this technique is a thin ceramic shell that replaces the usual stainless steel flask and solid ceramic mold. The process is particularly suited to larger or longer parts that cannot be efficiently mounted in a conventional flask. One such part we produced was recently reduced in cost from \$16 to \$6.

Now . . . where toughness really counts, a major manufacturer of disposal units has turned to investment castings to produce the impeller blades that grind everything from glass to garbage. This is a unique twist in the production of a consumer product but the combination of hardness, shape, tolerance and corrosion resistance that was necessary made it a natural for investment casting. It's now in full production.

In parts manufacture, an important cost-saving factor is customers' specifications of tolerances. Tight tolerances increase costs even though it is possible to provide them. But many times they're not necessary to functional performance of the part. These tolerances in 3-dimensional ranges represent the degree of precision that can normally be attained in the "as-cast" state of an investment casting: up to  $1\frac{1}{2}'' \pm .003$  . . .  $\frac{1}{2}''$  to  $1'' \pm .005$  . . . over  $1'' \pm .005$  per inch. So when checking estimates—make sure you've specified widest tolerances allowed in the actual part application.

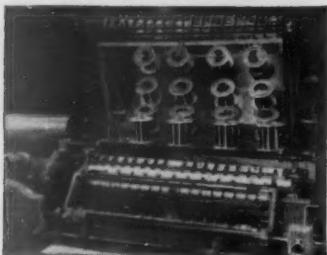
Since the beginning of a concerted cost-evaluation survey started two years ago—Brown & Sharpe Manufacturing Co. in Rhode Island have converted more than 80 stock tool parts to investment castings at an average saving of 30% on each tool. It is estimated that about 45 other stock-tool parts will be similarly converted in the future.

Incidentally—we have on hand reprints of an article that recently appeared in this magazine that describes step by step how Brown & Sharpe conducted its cost-appraisal program to meet the problem of declining profits. We'll be happy to send you a copy. Write Hitchiner Manufacturing Company, Milford 51, New Hampshire.

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MANUFACTURING COMPANY, INC.  
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DacrALite is a double wrap of glass-dacron fibers over bare conductor. Available also over film insulations, in square or rectangular.



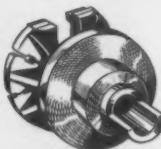
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Coated with a film of thermoplastic bonding material over insulated round copper wire. For use in any coil winding requiring a self-bonding magnet wire.



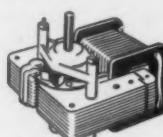
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Polyester film insulation having outstanding high-temperature stability. Class F 155°C rating. Test conducted per AIEE-57 and MIL-W-19583.



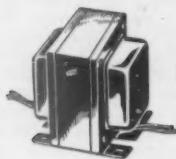
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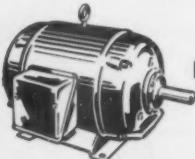
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## Washington Report

### • Industry Inventory Policy More Efficient

A study of postwar inventory developments leads Department of Commerce to report that industry has increased its efficiency in the use of inventories.

The ratio of inventory to total output in the postwar period was roughly one-quarter lower than in the 1920-29 period.

Other findings reported were:

(1) Liquidation of inventory occurred in relatively short spans of time in each of the three postwar recessions. The liquidations canceled only part of the prior accumulations, and were followed by extended periods of rising stocks.

(2) The peak of inventory accumulation took place well in advance of the peak in business activity. Liquidation on the other hand, reached its maximum at or near the low in the business cycle.

(3) The pattern of the three recession periods was for inventory levels to turn down several months after the peak in GNP was reached, and to turn up approximately six months after the recession low.

(4) Despite sharp inventory liquidations in the recession cycles, the ratio between inventory and production did not show substantial improvement until after business recovery began.

A dramatic upturn in inventory accumulation was reported by the Commerce Department for first quarter of this year, after a year of liquidation.

First quarter forecasts were reported early, as a part of the general policy followed by various government agencies of getting good news out as quickly as possible. This concept of a quick release of favorable news is not a Pollyanna approach. Government thinking is that report of favorable trends will stimulate additional business investment.

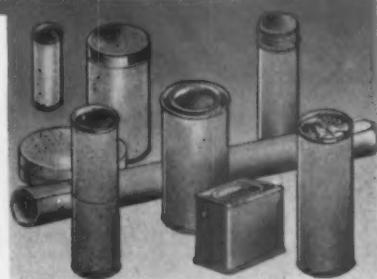
When economic trends go the other way, however, there is still a trend on the part of government to drag its feet in announcing discouraging news.—A. N. Wecksler

*From Coast to Coast  
and in Canada too!*

### QUALITY AND SERVICE IN PACKAGING

#### CONTAINERS — TUBING

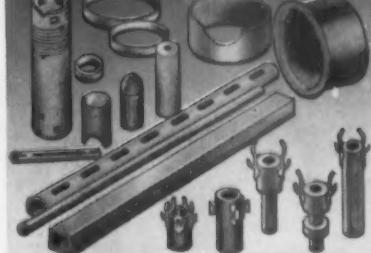
Made of high grade materials — designed for your particular packaging requirements as well as containers that meet military specifications.



### QUALITY AND SERVICE IN PHENOLIC TUBING

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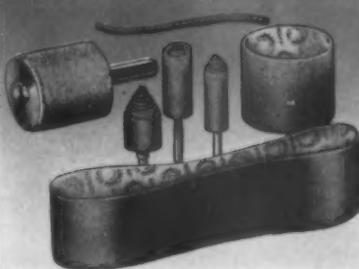
Laminated phenolic tubing — standard in the electrical and electronic industries with low-cost applications in many other fields.



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ALL-FIBRE CANS • COMBINATION METAL AND PAPER CANS  
• SPIRALLY WOUND TUBES AND CORES FOR ALL PURPOSES.

CLEVELAND CONTAINER CANADA, LTD.

Plants and Sales Offices: TORONTO and PRESCOTT, ONT. Sales Office: MONTREAL

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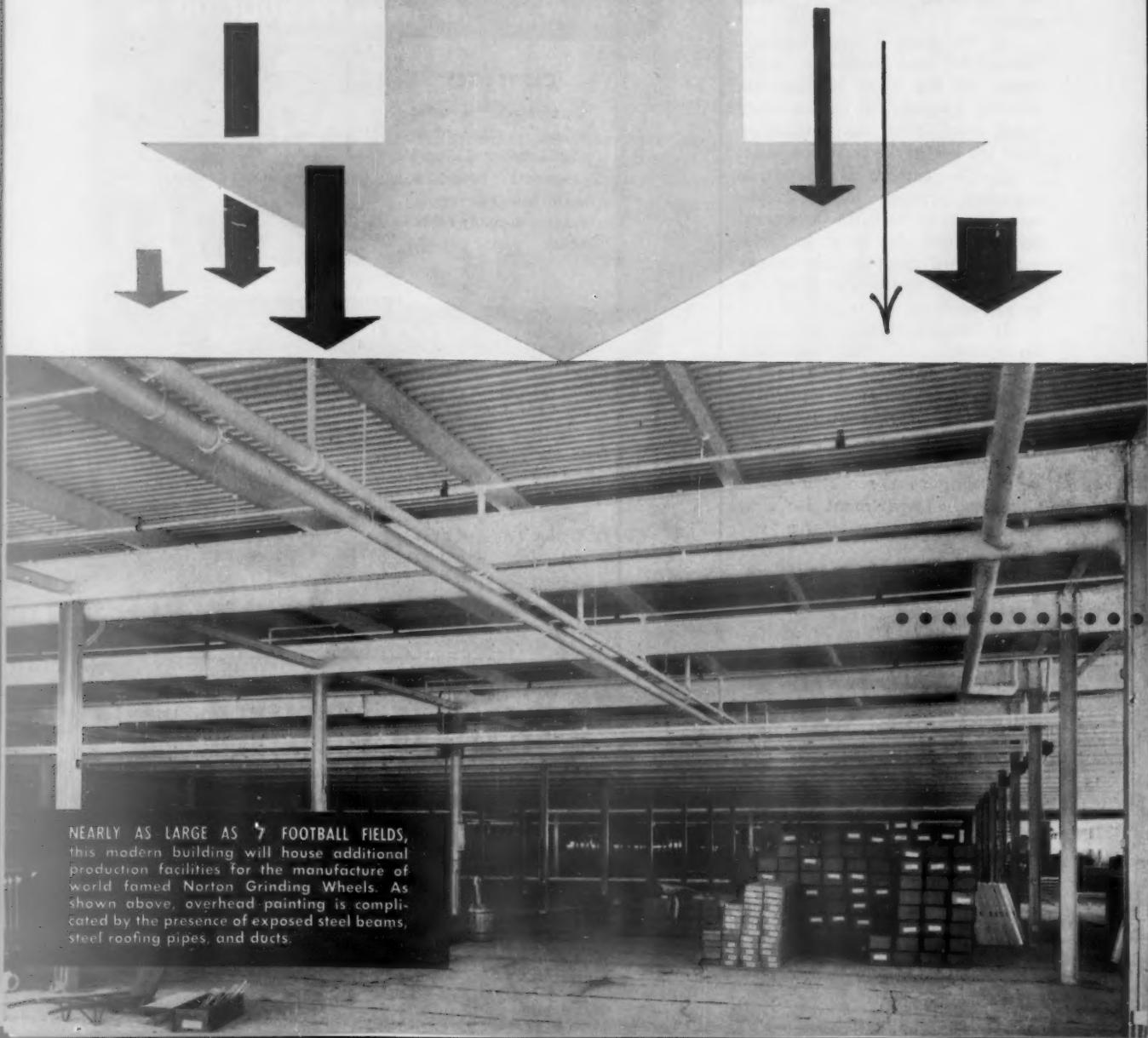
ABRASIVE  
DIVISION  
AT  
CLEVELAND

For More Information Write No. 170 on Inquiry Card—Page 32

For More Information Write No. 171 on Inquiry Card—Page 32—

# DOWN GOES THE OVERHEAD!

NEW BARRELED SUNLIGHT SUPER HIDING  
WHITE LIGHTENS THE ILLUMINATION...  
LOWERS CEILING PAINT COSTS AT  
THIS NEW NORTON COMPANY PLANT

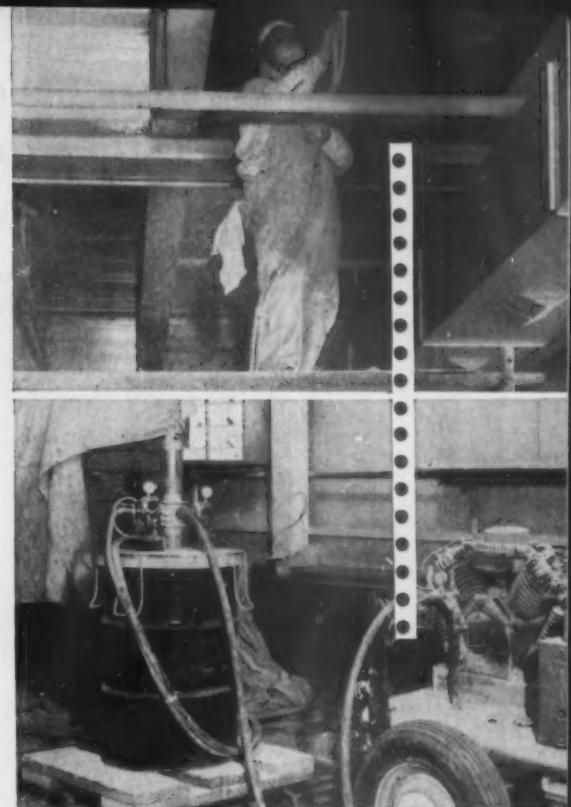


NEARLY AS LARGE AS 7 FOOTBALL FIELDS,  
this modern building will house additional  
production facilities for the manufacture of  
world famed Norton Grinding Wheels. As  
shown above, overhead painting is compli-  
cated by the presence of exposed steel beams,  
steel roofing pipes, and ducts.

**Five acres of overhead** — 19 feet high and with a minimum of natural lighting — posed plenty of painting problems for E. J. Cross Company, building contractors for The Norton Company's new grinding wheel plant at Worcester, Massachusetts. Yet they solved them and saved substantially on coverage costs with Barreled Sunlight Engineered Paints.

**To bring down** the high cost of on-the-job mixing and application, Mr. Richard V. George, Superintendent of Painting, specified ready-for-the-gun Barreled Sunlight Super Hiding White. Using high speed spray guns, his five-man crew applied this engineered paint directly from 55-gallon drums to ceiling areas with a minimum of fog, no runs and perfect results. As reported by Mr. George, "the new Barreled Sunlight Super Hiding White has a better sheen and tighter film. *It looks white even in dark, shadow areas!*"

**Lighter, brighter** and more economical paint jobs like this do not "just happen". Only through careful planning and the use of Barreled Sunlight Engineered Paints — specially formulated for heavy duty requirements — can you be sure of perfect paint jobs every time. Prove it for yourself by making the famed Barreled Sunlight "On-the-Wall" Test in your own plant. Fill out the attached coupon now for fast action!



**DIRECT FROM DRUM TO GUN  
IN ONE OPERATION!**

To speed painting of overhead areas in this giant plant, ready-to-apply Barreled Sunlight Super Hiding Paint is applied with spray guns directly from 55-gallon drums.

## Barreled Sunlight



FOR A BETTER LOOKING, LONGER LASTING PAINT JOB AT LOWER COST

**BARRELED SUNLIGHT PAINT COMPANY  
18-E Dudley Street, Providence 1, R. I.**

- Please contact me soon to arrange an "On-the-Wall" Paint Test at no obligation.
- Send me a free copy of the Barreled Sunlight Engineered Color Catalog.

NAME..... POSITION.....

COMPANY.....

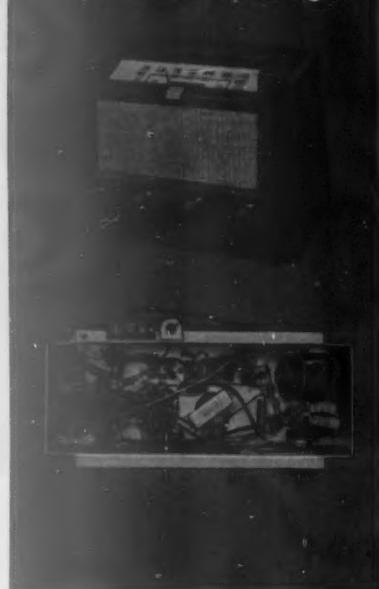
STREET.....

CITY..... STATE.....

Send for your free copy of this Barreled Sunlight Engineered Color Catalog now. Contains complete descriptive information plus Color Chip Selection Section.

# Miniaturization of electronic components highlights need for Synthane plastic laminates

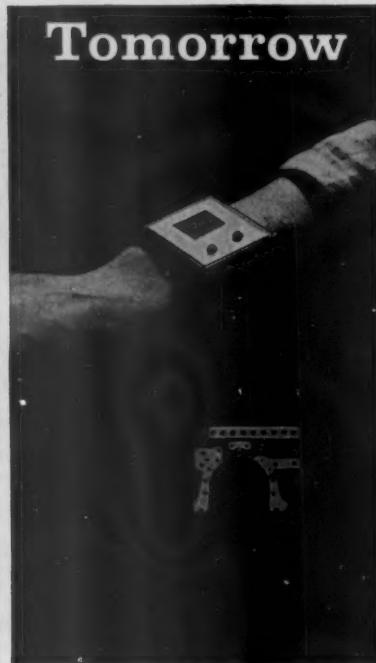
## Yesterday



## Today



## Tomorrow



The tremendous increase in miniaturized electronic components emphasizes a need for the combined properties of Synthane laminated plastics.

Miniaturization, as you know, reduces the insulated path between terminals or conductors, placing a premium upon the insulation resistance of the laminate.

**Printed Circuitry Adds to Problem**  
Printed circuitry, the development that made so many miniature circuits possible, also magnifies the insulation resistance problem because there is a temptation to save space by shortening the distance between conductors. And often the insulation resistance requirement is complicated by printing on both

sides of the laminated circuit board.

### Other Properties Influence Choice of Laminates

There are many other properties of a laminate which help to make miniaturization practical. For example, miniaturization brings the holes for terminals closer together, a result usually accompanied by a reduction in the size of holes. Punchability of the laminate, therefore, becomes an important consideration. Mechanical strength, after punching, is also worth attention.

In addition, climatic conditions greatly affect electronic equipment. Frequently, laminated plastics must retain their excellent characteristics even under the influence of heat, cold and change of humidities.

Choice of a Synthane laminate with good insulation resistance will finally rest upon the atmospheric conditions of the application, mechanical, electrical and chemical properties required, and, to a degree, upon the economics of the situation.

### Synthane Laminates for Insulation Resistance

Usually high insulation resistant Synthane laminates for printed circuits are processed with selected core and surface sheets to obtain the proper balance of electrical and moisture resistance

values and to provide an excellent bonding surface for the metal foil.

Synthane Grades G-10 and G-11 (glass epoxy grades) are the top plastic laminates for insulation resistance. G-11 is the stronger flexurally at elevated temperatures. Synthane Grades XXXP, XXXP-IR and P-25 have very good insulation resistance, and are easier to machine and cost less than the epoxy grades. Grade P-25 may be cold punched. Where there must be high impact strength as well as good insulation resistance Grade N-1 may be the logical choice.

**Applications:** Among the high insulation resistance applications of Synthane laminates are wiring cards for computers, printed circuits for television, switch rotors, automation circuits, automobile dashboard wiring.

You are urged to write directly to us or to call in a Synthane representative for help in choosing the proper grade for your application.

**SYNTHANE**  
CORPORATION, **S** OAKS, PENNA.  
Laminated Plastics for Industry  
Sheets, Rods, Tubes, Fabricated Parts  
Molded-laminated, Molded-macerated



Test for insulation resistance as conducted by Synthane Corporation.



## **IN PRODUCT AFTER PRODUCT AFTER PRODUCT ... WEIRTON HOT- AND COLD-ROLLED SHEET**

Is your product as complicated as automobile sheet metalwork? Or as tough to form as a portable TV cabinet? Or as dependent on good looks as laundry equipment?

Then Weirton hot- or cold-rolled sheet is for you, too. It brings you the triple advantages of uniform gauge, uniform strength, uniform ductility. It holds up under your toughest fabrication steps, helps you turn out a better product at lower cost. And it'll prove itself in your product, just as it has in thousands of others.

Weirton produces top quality sheets to serve the needs of modern fabrication. For prompt and complete information, just phone or write Weirton Steel Company, Dept. G-4 Weirton, West Virginia.



**WEIRTON STEEL COMPANY**  
WEIRTON, WEST VIRGINIA  
a division of



IT PAYS TO STANDARDIZE ON STANSCREW



## Stanscrew service prevents problem for manufacturer of journal bearings

The wise manufacturer eliminates any possibility of fastener breakage *before* it can become a serious and expensive field problem.

As a prime example, a leading manufacturer of sealed cartridge journal bearings was concerned about the cap screws used to hold one essential part—the thrust cap—in place. They knew the lateral movements of a railroad car resulted in thrust on this cap, imposing extremely heavy loads on these fasteners.

A call to their industrial distributor soon had a Stanscrew fastener specialist on the job. He recommended continued use of a torque wrench and worked out the proper setting so that each fastener carried its rated load. Subsequent laboratory tests proved these recommended torque settings insured against fastener breakage.

The manufacturer accepted these recommendations . . . and thus eliminated a potentially

serious problem before it could develop. The torque settings and technique developed by the Stanscrew representative have been incorporated in the company's instruction and maintenance manual to insure proper maintenance procedures.

Technical assistance like this is just one of the many reasons more and more manufacturers are standardizing on Stanscrew. Trained specialists, backed by an outstanding engineering staff, can solve your particular fastener problem. In addition to assuring the dependability of your product, often they can save you money . . . for example by substituting a standard fastener for a costly "special".

*Call your Stanscrew distributor today for the answers to your fastener problems. He will see that the Stanscrew Fastener Specialist visits you without delay.*



**STANDARD SCREW COMPANY**

2701 Washington Boulevard, Bellwood, Illinois

**CHICAGO** | THE CHICAGO SCREW COMPANY, BELLWOOD, ILLINOIS  
**HMS** | HARTFORD MACHINE SCREW COMPANY, HARTFORD, CONNECTICUT  
**WESTERN** | THE WESTERN AUTOMATIC MACHINE SCREW COMPANY, ELYRIA, OHIO



## This way out...of bottlenecks

AI RESEARCH MANUFACTURING DIVISIONS of The Garrett Corporation had the problem facing industry today... how to cut inventory to a minimum yet maintain production in the face of costly changes and vendor delays. The premium transportation then used was slow and undependable. Production bottlenecks occurred.

Management decided to move all critical parts by Emery Air Procurement Service. Emery's round-the-clock, door-to-door service proved to be fast, dependable and, at weights moved, it cost about the same as other air freight.

Perhaps Emery can help you in your procurement, distribution or promotion. Call or write us today. Offices in all major cities.

### SEE WHAT YOU SAVE!\*

	2500 MI.		1700 MI.		700 MI.	
	Emery	Air Express	Emery	Air Express	Emery	Air Express
50 lb.	\$23.54	\$39.70	\$19.38	\$28.50	\$13.27	\$12.50
100 lb.	38.90	77.40	31.20	55.00	19.10	23.00
200 lb.	69.00	154.80	53.00	110.00	29.80	46.00

\*Rates apply to most commodities between most major cities.



**EMERY AIR FREIGHT CORPORATION**

General Offices: 801 Second Avenue, New York 17, N. Y.—Domestic and International Service.

For More Information Write No. 175 on Inquiry Card—Page 32  
MAY 11, 1959

For More Information Write No. 176 on Inquiry Card—Page 32→  
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You  
the



# take brush!

See the  
many Rust-Oleum  
DIFFERENCES  
yourself!

A few easy strokes of the brush proves more than a thousand words . . . see how smoothly Rust-Oleum flows on . . . no pull, no drag . . . and it dries free of brushmarks. See, too, how much more coverage Rust-Oleum gives you . . . up to 30% more area depending upon the condition and porosity of the surface.

If your metal surfaces are *rusty* — simply brush or spray Rust-Oleum 769 Damp-Proof Red Primer right over the sound rusted metal after scraping and wirebrushing to remove rust scale and loose rust. The *specially-processed fish oil vehicle* in the primer penetrates rust to bare metal — driving out air and moisture. Easy as that to Stop Rust — and save time, money, and metal.

For *lasting beauty* — follow up with a Rust-Oleum finish coating in the color of your choice — from grays, greens, blacks, and aluminums to yellows, blues, whites, or browns — or from the many popular *pastel shades*.

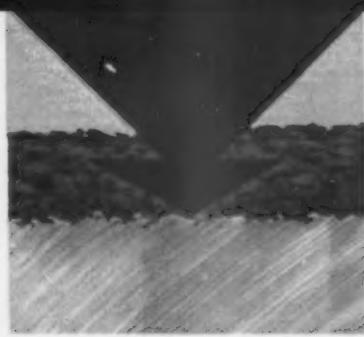
That is the Rust-Oleum *System* of primer and finish coat for maximum over-the-years protection. A system that is measured by the money you save. Specify Rust-Oleum for maintenance, new construction, and re-modeling. Your Rust-Oleum Industrial Distributor maintains complete stocks for prompt delivery . . . he will be happy to consult with you on your coating problems.



A matter of excellence.  
Distinctive as your own fingerprint.



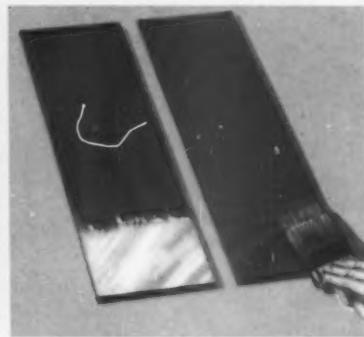
Apply Rust-Oleum 769 Damp-Proof Red Primer directly over sound rusted surfaces. Saves costly surface preparations—lasts and lasts.



The specially-processed fish oil vehicle in the primer penetrates rust to bare metal—as proved in radioactive tracing studies.



Rust-Oleum, in its many forms, resists rain, fumes, heat, moisture, sun, and general weathering to stand up over the years.



Up to 30% more coverage with Rust-Oleum, depending upon the condition and porosity of the surface. Another Rust-Oleum difference.



Rust-Oleum primers and finish coatings are easily applied by spray. Flows smoothly . . . may be used in conventional, hot spray, or high pressure air-less spray.



What is your coating problem? What color do you need? Get lasting beauty in the color of your choice. Mail coupon for color charts.

— SEND FOR FREE TEST SAMPLE! ATTACH TO YOUR LETTERHEAD! —

Rust-Oleum Corporation  
2981 Oakton Street, Evanston, Illinois

Please send me the following at no cost or obligation:

- Free test sample of Rust-Oleum 769 Damp-Proof Red Primer for rusted metal surfaces.
- Complete literature with applications and color charts.
- Information on matching special colors.
- Thirty-page report on Rust-Oleum fish oil penetration.

# FRASSE ALUMINUM

helps tell  
how she's doing!

Ballistic missile success hinges on intelligence obtained in test firings. Tracking data — reporting velocity, direction, altitude, temperature, etc. is vital — when processed, it guides critical design changes.

Heart of the intricate data processing system at Cape Canaveral is a Potter Magnityper — a high speed electronic printer that decodes raw material . . . then stores, collates, interprets and prints at 72 thousand characters per minute. Lightweight, non-magnetic aluminum is essential to its efficient operation — that's why the Magnityper is made almost completely of Frasse aluminum.

Frasse ships the required sizes quickly from stock — in the grades that



contribute to its ease of fabrication and performance. For example, Frasse supplies 2024-T4 bars for strength and machinability, 5052-H34 sheet for formability and weldability and "775" tooling plate for dimensional accuracy with no distortion when worked.

Perhaps these same qualities can increase the efficiency of your product — or reduce fabricating costs. It's worth investigating — and a Frasse aluminum specialist will be glad to help. There's no obligation — simply write or call your nearest Frasse office. You'll be glad you did.

*Call FRASSE for ALUMINUM*

Peter A.

**Frasse**

& Co., Inc.

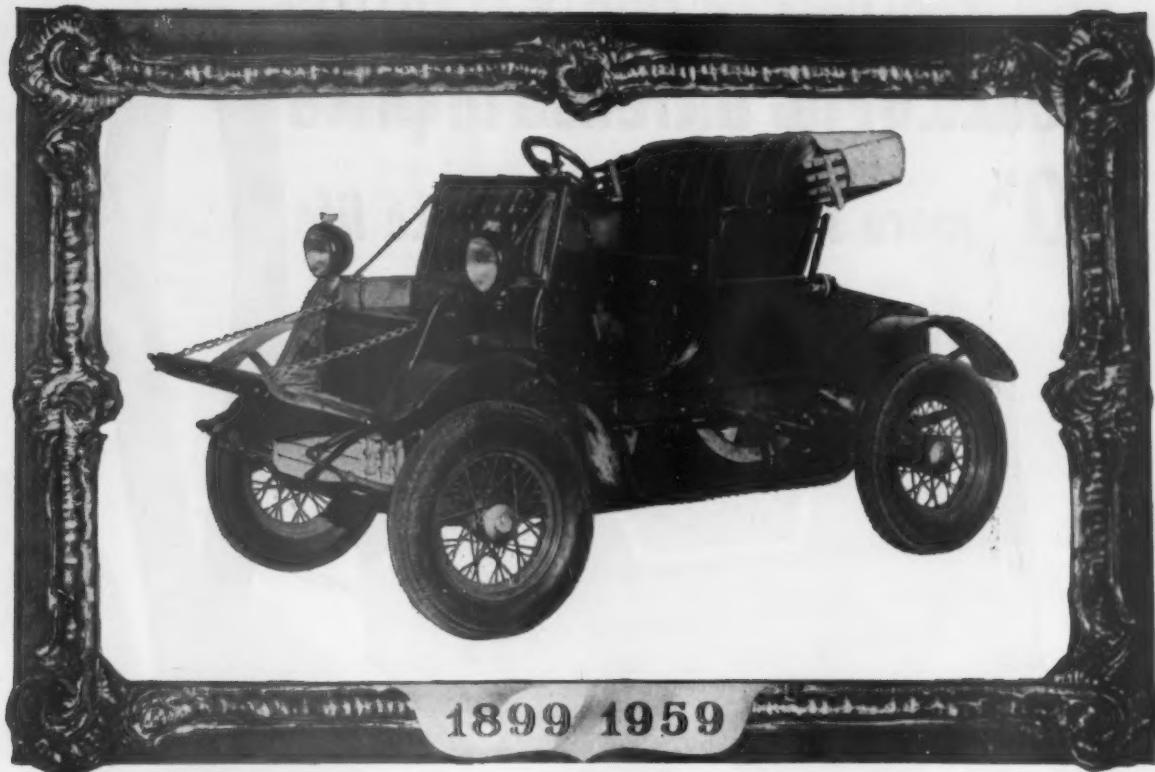
NEW YORK 13, N. Y.  
17 Grand St.  
WALKER 5-2200

PHILADELPHIA 29, PA.  
3911 Wissahickon Ave.  
BALDWIN 9-9900

BUFFALO 7, N. Y.  
P. O. Box K, Sta. B  
BEDFORD 4700

SYRACUSE 1, N. Y.  
P. O. Box 1267  
HOWARD 3-8655

HARTFORD 1, CONN.  
P. O. Box 1949  
JACKSON 9-6861



## Everything's changed but the trademark on the bearings

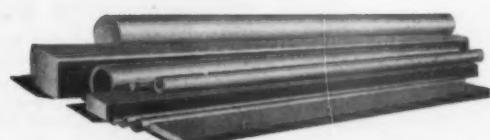
BUILT by the St. Louis Motor Car Co. in 1899, this car was the first equipped with Timken® tapered roller bearings. It's still running. And today every make of American car but one uses Timken bearings. The things that the trademark "Timken" stands for haven't changed. It still means the highest quality, the best-known name in bearings, and the kind of service

you can't get anywhere else. It means better performance with longer life and less maintenance in machine tools, steel mills, heavy construction machinery, farm implements and tractors—wherever wheels and shafts turn.

"Timken" is a registered trademark that identifies all products of The Timken Roller Bearing Company—tapered roller bearings, fine alloy steel

bars, seamless steel tubing and removable rock bits.

It's to your advantage to remember that "Timken" is not a type of product. It's your assurance of the best in tapered roller bearings, fine alloy steels and removable rock bits. The Timken Roller Bearing Company, Canton 6, Ohio. Canadian plant: St. Thomas, Ontario. Cable: "TIMROSCO".



TAPERED ROLLER BEARINGS • REMOVABLE ROCK BITS • FINE ALLOY STEEL

# TIMKEN®

## first in quality for 60 years

For More Information Write No. 178 on Inquiry Card—Page 32

MAY 11, 1959

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# Now...at no increase in price 40% more HP...longer service life with Gates Vulco Ropes



Gates brings you, through *Specialized Research* in V-Belts, another important cost-saving advance:

Now—at no increase in price—the horsepower rating of Gates Vulco Ropes has been increased 40%.

As replacements on standard drives, these V-Belts with 40% more load carrying ability will give longer service. Longer life reduces down-time, and cuts belt replacement costs.

And as the tag tells you: Belts labeled "Gates Vulco Rope" or "Gates Hi-Power" are identical in construction and can be used interchangeably in matched sets.

### Available Now from your nearby Gates Distributor

Today, all Vulco Ropes in Gates distributor and warehouse stocks have the new higher horsepower rating.

See the Yellow Pages of your phone book for your nearest Gates V-Belt distributor.

### Designing NEW Drives?

For new drives, Gates now offers you the *new Super HC V-Belts and Sheaves*—the most advanced concept in power transmission in 25 years. The Super HC Drive is far more compact...takes up to 50% less space. Costs less, too. You save as much as 20% over present V-Belt drives. Ask your nearby Gates distributor for Handbook DH-900 entitled, "The Modern Way to Design V-Belt Drives."

**The Gates Rubber Company** Denver, Colorado  
Gates Rubber of Canada Ltd., Brantford, Ontario



World's Largest Maker of V-Belts

TPA-412

# Gates VULCO ROPE Hi-Power V-Belts

# "QUALITY and ECONOMY... SPANG Steel Pipe gave us both"

*says Mr. Joseph Yanasheski, Piping Estimator for  
Joseph A. Rado, Mechanical Contractor, Berwick, Pa.*

"One of the biggest problems in our business is to do a first-rate job and still keep costs in line," states Mr. Yanasheski. "With the help of SPANG CW Steel Pipe we were able to do just that at the Berwick, Pennsylvania, Hospital installation. Not only did SPANG Steel Pipe assure us of a reliable performance, but also the economy of using steel pipe helped us keep costs down.

"Another advantage to using SPANG Steel Pipe is its good welding qualities. By welding instead of threading the pipe, we achieved a considerable savings in

time costs and eliminated the danger of leakage at the joints."

## KEEP YOUR INSTALLATION COSTS DOWN, TOO... WITH SPANG CW STEEL PIPE

When you use SPANG CW Steel Pipe you get *top-quality*, money-saving performance. Why? Because SPANG Pipe is *quality-controlled* during manufacturing and thoroughly tested before shipping. Your SPANG Distributor can give you the fast, efficient service you require. Next job, make it steel pipe . . . make it SPANG.



## THE NATIONAL SUPPLY COMPANY

Subsidiary of Armco Steel Corporation



TWO GATEWAY CENTER, PITTSBURGH, PA.



20,000 feet of SPANG CW Steel Pipe fulfilled all the pipe requirements for the Berwick Hospital . . . in the air conditioning and heating units, sterilizer room and laundry. Here in the 40' x 65' boiler room, the SPANG Pipe runs in the ceiling so that there is no interference with the concrete-laying operation during construction.

**Mechanical Contractor:**  
Joseph A. Rado, Berwick, Pa.  
**Architect:** Naaker and Neubauer,  
Washington, D.C.  
**Hospital Consultant:** Gordon  
A. Friesen Associates,  
Washington, D.C.  
**Mechanical & Electrical  
Consultant:** Shefferman and  
Bigelson, Washington, D.C.  
**SPANG Distributor:** Busser  
Supply Company, Lewisburg, Pa.



# For the first time!

## Everything you need in Dial Thermometers for Piping and Duct work!

A new and complete line of instruments: Dial thermometer of Marsh precision and accuracy designed down to the last detail for piping and duct work . . . for use on heating and cooling equipment, air ducts, vessels and kilns, ovens and similar applications.

### Easier to read

Illustrations tell the story. Four types, seven ranges—72 stock combinations to meet every condition. Big, legible  $3\frac{1}{2}$ " and  $4\frac{1}{2}$ " dials . . . easy to read in places where piping and duct thermometers must be installed. Ease of reading further increased by provision for tilting and turning dials to any desired reading angle. Line includes distant reading types that take care of remote locations.

### Unbreakable—more accurate

Instead of fragile difficult-to-read glass tube thermometers you now have sturdy, unbreakable, legible Marsh Dial Thermometers. Guaranteed accurate to plus or minus one division of the scale, they have far greater readable accuracy than any glass tube type. All have the famous Marsh "Recalibrator"—to keep them accurate.

### All purpose

Design provides for every on-the-job condition. Separable sockets ("wells") simplify installation—or removal for servicing. Extension necks take care of insulation on piping or ducts. Long stems in duct type put temperature-sensitive section where it belongs.

Note the brief specifications opposite. Any thermometer is available from stock.

Write for bulletin telling the whole story.

**Jas. P. Marsh Corporation  
Dept. G, Skokie, Ill.**

Marsh Instrument & Valve Co. (Canada) Ltd.  
8407 103rd Street, Edmonton, Alberta

# MARSH

## DIAL THERMOMETERS



FOR  
DUCTS

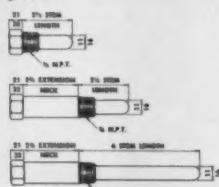
### For piping

Dial sizes:  $3\frac{1}{2}$ " and  $4\frac{1}{2}$ "

#### Ranges:

0° to 100°F for chilled water  
20° to 120°F for condenser water  
40° to 240°F and 100° to 300° for hot water and domestic water  
 $\frac{3}{4}$ " NPT connection

All ranges, in both direct mounted and remote reading types, available with three standard sockets shown in drawing below.

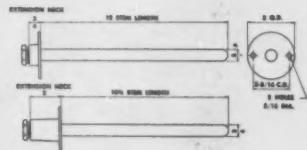


### For ducts

Dial sizes:  $3\frac{1}{2}$ " and  $4\frac{1}{2}$ "

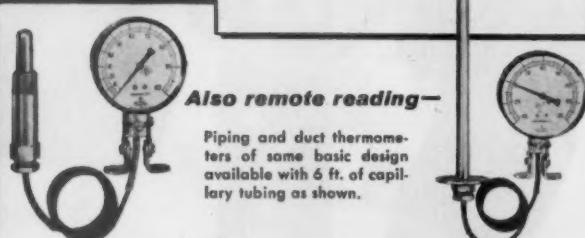
Ranges: -40° to +120°F  
0° to 160°F  
0° to 220°F

All ranges, in both direct mounted and remote reading types, available with standard extension necks and stems shown in drawing below.



### Also remote reading—

Piping and duct thermometers of same basic design available with 6 ft. of capillary tubing as shown.





small Gears . . . very small Gears . . . extremely small Gears . . .

## PRECISION-MADE IN PRODUCTION QUANTITIES!

We'll take off our hats to nobody when it comes to filling requirements for Gears to 120 DP.—turned out in economical quantity runs—which meet the toughest specifications! Bevels, Helixes, Internals, Clusters—of steel or aluminum—miniaturize as you will, G.S. can design and produce the Gears you need for Instruments—Appliances—Missiles—Control Systems—and the like. Our ability to give spectacularly uniform performance on Gearing of small size or fine pitch has, perhaps, been our best-known specialty during our 43 years of dealing with demanding users (though today we do many other Gear-making jobs with equal facility and skill).

Have you an application where precision in small Gears is a vital factor in smooth and satisfactory production in your plant, or trouble-free performance of your product in use? Then put the specially-trained, broadly experienced G.S. Gear Engineers, and the superbly equipped G.S. plant, on your team. Today would be a good time to start!

**GEAR**  
Specialties, Inc.

2635 WEST MEDILL AVENUE  
CHICAGO 47, ILLINOIS

SPURS • SPIRALS • HELICALS • BEVELS • INTERNALS  
WORM GEARING • RACKS • THREAD GRINDING

WORLD'S LARGEST EXCLUSIVE MANUFACTURERS  
OF FRACTIONAL HORSEPOWER GEARING

**SEND FOR G.S. illustrated folder! See where and how we mass-manufacture Small Gearing to uniformly fine tolerances. Folder contains 23 pictures of Small Gears, plant view, as well as Diametral and Circular Pitch Tables. Ask for your copy on company stationery, please!**

*43 Years of Specializing in Small Gearing!*

Call in your  
Norton man  
for the latest facts on

# Carbide grinding



**Magnified View** of a man-made diamond. The extremely jagged surface provides a large, tight-holding contact area for bonding. In the new Norton SD wheels this extra gripping power, teamed with advancements in diamond wheel construction, reduces diamond loss and carbide loading to a minimum — typical of Norton leadership in getting the maximum working power out of all diamonds, mined or man-made.

# with Norton wheels

## using mined or man-made diamonds

Norton diamond wheels — the most complete line for carbide grinding — are backed by pioneering never equalled, whether the diamonds used are mined or man-made.

Norton began its leadership in diamond wheel development back in 1930 . . . introduced all three bond types (resinoid, metal and vitrified) of diamond wheels . . . does all its own sizing and checking of diamonds . . . duplicates wheel specifications with constant accuracy.

Today Norton leadership continues with the use of man-made diamonds. Among the newest, most efficient materials produced for industry, man-made diamonds last longer in grinding wheels for many carbide grinding operations because they are more firmly anchored in the bond . . . and because their greater friability presents new cutting edges faster, thereby decreasing power requirements and speeding cutting action.

These properties of man-made diamonds are used to their fullest advantages in the new Norton SD resinoid and vitrified wheels. This has been proved in more than a year of nation-wide, comparative testing . . . *In 63% of hundreds of field tests the average service life of Norton SD diamond wheels was at least 25% longer than the life of wheels using natural, mined diamonds, with no loss in cutting action.*

With each Norton diamond wheel, of mined or man-made diamonds, you get a certificate of the accuracy of diamond concentration. You can depend on this certificate to mean exactly what it says and what you're paying for.

You can depend on your Norton Man, too. This expert Abrasive Engineer has kept close contact with the development of man-made diamonds for grinding applications since the start. He can help you take a giant step forward in your carbide grinding — can show you how to get better grinding quality, longer service life and lower cost grinding for every dollar you spend on diamond wheels. NORTON COMPANY, General Offices, Worcester 6, Mass. Plants and distributors around the world.



**Making better products . . .  
to make your products better**

**NORTON PRODUCTS:** Abrasives • Grinding Wheels • Grinding Machines • Refractories • Electrochemicals — BEHR-MANNING DIVISION: Coated Abrasives • Sharpening Stones • Pressure-Sensitive Tapes

# Information For Your Catalog Files

## BEARING UNITS

Catalog BU-101-B illustrates and describes a line of take-up bearing units. Details of construction, dimensional tables, and stock sizes are also included.

**Browning Manufacturing Company**

Write No. 1 on Inquiry Card—Page 32

## CARBIDES

A 32-page catalog called "Cemented Carbides for Industry." Gives information on brazed tools, carbide inserts, tool holders, and blanks. Includes information about two new styles in the indexable insert line.

**Allegheny Ludlum Steel Corporation**

Write No. 2 on Inquiry Card—Page 32

## DIAMOND WHEELS

An expanded revised edition of catalog ESA-290 describes man-made and natural diamond wheels. The 48-page bulletin lists six new wheel shapes and many additions of diamond depths and concentrations. Also included is a table of recommended grain and grade specifications for common operations performed in sharpening carbide tipped tools and grinding cemented carbides.

**Simonds Abrasive Company**

Write No. 3 on Inquiry Card—Page 32

## FANS

A 16-page two-color catalog describing a line of induced draft fans. Bulletin L-3 lists advantages and illustrates features through photographs. Also presented are fully-dimensioned drawings and rating charts, plus schematic diagrams of installations.

**Fuller Company**

Write No. 4 on Inquiry Card—Page 32

## HOISTS

Bulletin 920 describes a line of type F, low-headroom electric hoists. The 12-page catalog includes construction details, mounting option information, performance data, and dimensions.

**Robbins and Myers, Inc.**

Write No. 5 on Inquiry Card—Page 32

## INDUSTRIAL BELTING

A 12-page booklet on nylon core belting. Includes a description of how nylon core is made and reasons for its application.

**L. H. Shingle Company**

Write No. 6 on Inquiry Card—Page 32

## LATHES

Bulletin No. 580 describes a line of speed lathes. The 16-page catalog illustrates and gives detailed data on bench and floor type lathes. A variety of accessory equipment is also presented.

**Schauer Manufacturing Corp.**

Write No. 7 on Inquiry Card—Page 32

## MILLING CUTTERS

Catalog #591 describes new indexable insert face and shell end mills. Contains valuable information on different types of cutting tools.

**Viking Tool Company**

Write No. 8 on Inquiry Card—Page 32

## MOTOREDUCERS

Bulletin 3100 describes a line of helical gear all-motor and integral motoreducers. The 28-page catalog includes information on unit size and construction, typical installations, accessories, and special applications.

**Falk Corporation**

Write No. 9 on Inquiry Card—Page 32

## PNEUMATIC CONVEYORS

Bulletin 208 describes positive pressure pneumatic conveying systems. Included is a chart designed to help determine the horsepower and line size required for systems ranging in capacity from 1000 to 60,000 lbs./hr.

**Sprout, Waldron & Co., Inc.**

Write No. 10 on Inquiry Card—Page 32

## RUBBER

A fact book presenting information on rubber installation and compounds. The 24-page catalog gives size numbers and dimensions of all common industrial O-rings. Also included are reference charts.

**Minnesota Rubber Company**

Write No. 11 on Inquiry Card—Page 32

## STAINLESS STEEL

A 36-page book providing information on commercial stainless steel sheet and strip grades. Features comparative corrosion resistance tables of stainless steel types 302, 316, 430, and aluminum type 1100.

**Washington Steel Corporation**

Write No. 12 on Inquiry Card—Page 32

For More Information Write No. 184 on Inquiry Card—Page 32 →

PURCHASING

Yoloy "E" Sheets  
Hot and Cold-Rolled  
Structural Sheets

At Boyertown  
Auto Body Works,  
Youngstown Yoloy  
"E" Sheets are being  
fabricated into body  
sections for their  
commercial truck line.



# Accent on Excellence

## Youngstown Yoloy "E" sheets



Send for free technical  
bulletin on Youngstown  
Yoloy "E" Steel.



True value in Boyertown bodies is the trouble-free, year-in, year-out service they provide. It's a value that starts with skilled craftsmanship—using only the best raw materials available.

Boyertown Auto Body Works, Boyertown, Pa., specifies Youngstown Yoloy "E" Hot and Cold-Rolled Sheets as basic material for both the outside and inside panels, as well as for certain structural frame members such as rear corner posts and roof crowns, of their delivery truck line. They've found this versatile steel's high strength - low weight ratio allows design of higher payload vehicles.

Wherever high-strength steel becomes a part of things *you* make, the high standards of Youngstown *quality*, the personal touch in Youngstown *service* will help you create products with an "accent on excellence".



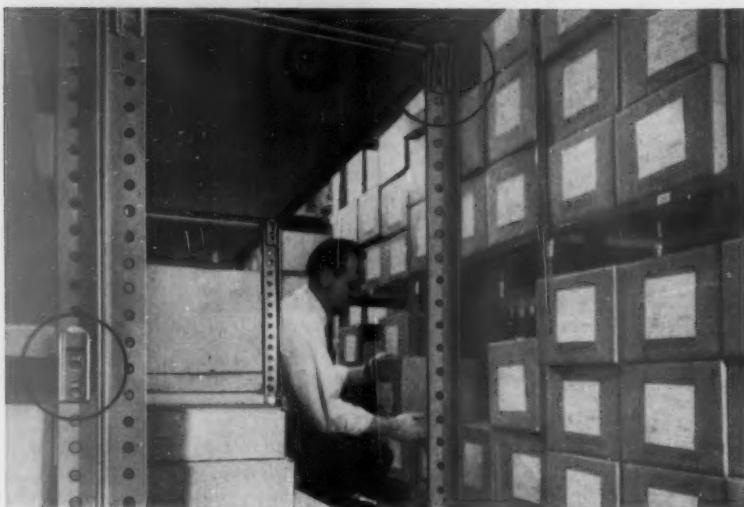
**Youngstown**  
Youngstown, Ohio

THE YOUNGSTOWN SHEET AND TUBE COMPANY

Carbon, Alloy and Yoloy Steel

## Buy shelving for what it can PRODUCE...like a machine tool!

Penco builds its new boltless steel shelving to produce... produce up to 50% saving in installation time, produce better protection and easier handling of materials, more efficient inventory systems. For example... two new channel clips eliminate nut and bolt assemblies, springs and tools... slip into place as fast as one man can pick them up. Get the full story on Penco planning and Penco savings; write for Bulletin B-40 today.



Extra-strong Penco T-posts stay *erect* under severest load conditions... including weight, and stress of loading sway. Channel clips (circled) lock-slip onto posts, hold shelves in a rigid grip... slip out instantly

for disassembly of shelving. Design simplicity permits minimum number of standard parts. Penco offers four shelving strengths... another Penco economy, as you buy only according to load requirements.



Even Penco finish is especially engineered to take a beating... with an extra, pre-paint phosphatizing step that prevents subsurface

corrosion and provides tight enamel bond, tougher chip-resistant finish. Send for catalog today. Write direct to...

### ALAN WOOD STEEL COMPANY PENCO DIVISION



410 Brower Avenue, Oaks, Pennsylvania

STEEL LOCKERS • STEEL CABINETS • STEEL SHELVING • BOOK CASE UNITS  
For More Information Write No. 185 on Inquiry Card—Page 32

## Catalog Files

### TORQUE CONVERTERS

Bulletin No. 496 covers torque converters for heavy industrial applications. The 12-page catalog illustrates design and principle of operation.

**National Supply Company**

Write No. 13 on Inquiry Card—Page 32

### UNIONS

Catalog U-2-58 describes forged steel unions. Provides detailed specification data on all types, sizes, materials, and pressure ratings. The illustrated bulletin covers the latest additions to the W-S line.

**H. K. Porter Company, Inc.**

Write No. 14 on Inquiry Card—Page 32

### VALVES

Catalog KS1-M discusses a line of series valves. The 20-page booklet contains parts ordering information, trim material, and recommended services. Also included is a figure number index for rapid reference.

**Kerotest Manufacturing Company**

Write No. 15 on Inquiry Card—Page 32

### VALVES AND FITTINGS

A 58-page illustrated bulletin detailing bronze and aluminum valves and fittings. Catalog B-159 includes information on nozzles, hose swivels, fill caps, tank truck faucets, and line strainers.

**Milwaukee Valve Company**

Write No. 16 on Inquiry Card—Page 32

### VARIABLE SPEED BELTS

Catalog V-173-B describes variable speed belts. Contains alphabetical listing by model, interchange guide with other makes, numerical listing, and list prices.

**Browning Manufacturing Company**

Write No. 17 on Inquiry Card—Page 32

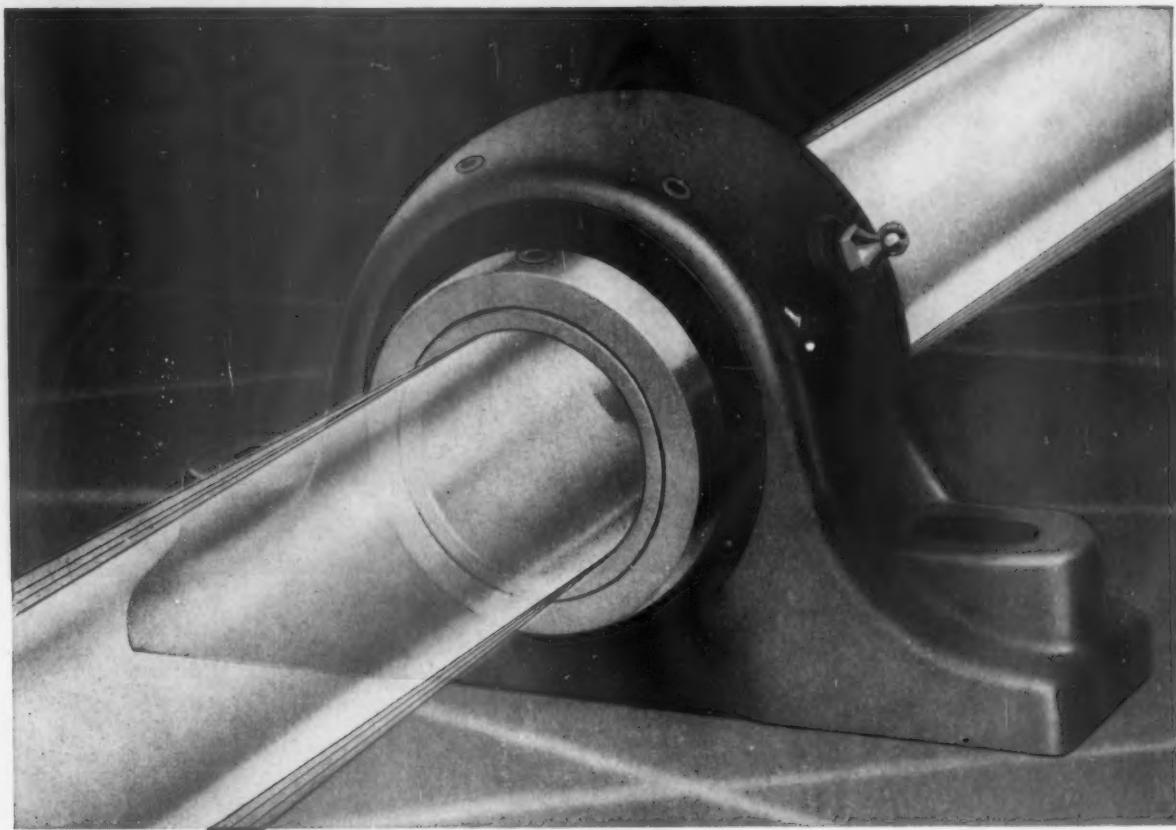
### WELDING

The 32-page "Welding Guide and Catalog" describes both products and practices. Covers a line of stainless, low-alloy, nonferrous rods and electrodes for manual, automatic, and semi-automatic welding. All products are given in chart form, together with specific information on each brand name listed.

**Arcos Corporation**

Write No. 18 on Inquiry Card—Page 32

# Free rolling . . . long lasting because it's *Self-Aligning*



## Link-Belt roller bearings compensate for misalignment of shafts and supports

Link-Belt Series 400 roller bearings have won a reputation as "the designer's choice." These self-aligning, double-row roller bearings compensate for inaccuracies in machining and assembly of equipment while maintaining full load capacity throughout their long life. Their compactness promotes simplicity of machinery design—their easy mounting reduces installation costs.

For complete information on the Series 400—and Link-Belt's complete line of ball and roller bearings—send for our Book 2550. It's available at any one of the 40 Link-Belt offices or your authorized stock-carrying distributor.

Look under BEARINGS in the yellow pages of your phone book.

Also available in these mountings:



flanged  
blocks



flanged  
cartridge  
blocks



cartridge  
blocks



hanger  
blocks

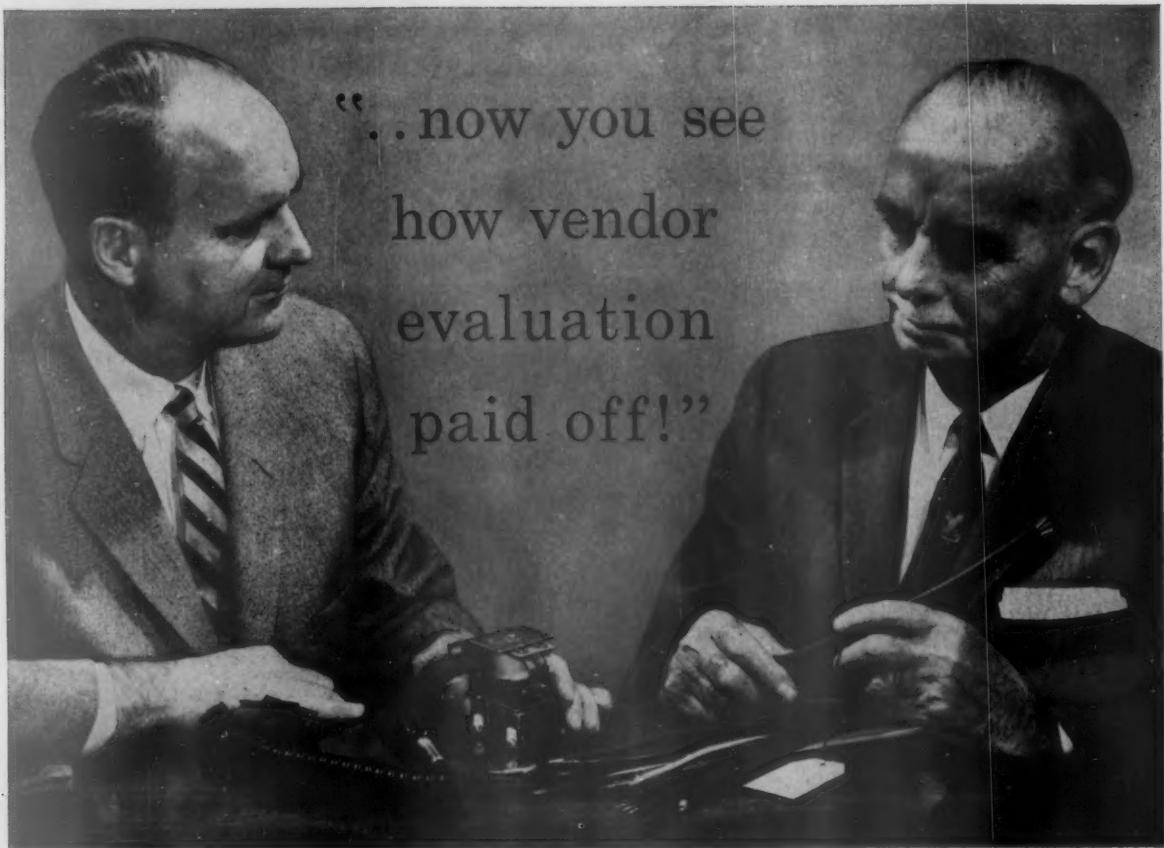
# LINK-BELT

SELF-ALIGNING BALL AND ROLLER BEARINGS

LINK-BELT COMPANY: Executive Offices, Prudential Plaza, Chicago 1. To Serve Industry There Are Link-Belt Plants, Sales Offices and Stock Carrying Distributors in All Principal Cities. Export Office, New York 7; Australia, Marrickville (Sydney); Brazil, São Paulo; Canada, Scarborough (Toronto 13); South Africa, Springs. Representatives Throughout the World.

For More Information Write No. 186 on Inquiry Card—Page 32

MAY 11, 1959



“...now you see  
how vendor  
evaluation  
paid off!”

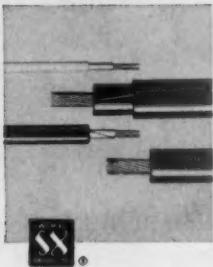
...Controls, Cord Sets, Wire and Cable All from Essex Single Source



**RBM Relays**

Low cost, high quality relays: general purpose, open and hermetically sealed, motor starting, AC industrial contactors and starters for Communications, Electronic and Appliance Industries.

R-B-M Controls Div., Legansport, Ind.



**SX Wire and Cable**

A complete line of appliance wiring material, radio, television and electronic hook-up wire, 200°C high temperature Sil-X wire, automotive wires and cables, and flexible cords.

Wire and Cable Div., Fort Wayne, Ind.



**Coiled Cords, Cord Sets**

Plastic and rubber power supply cords. Terminations of all types (molded plastic and rubber). Complete line of Coiled Cords in HPN, Type SP and Types SV, SJ; covering full appliance range.

Cords Limited Div., Belknap, Illinois

Across the board—Essex Single Source Service pays off! It's a sensible approach to reduction of finished product costs. Close quality control is reflected in absence of reject problems and tight production schedules are maintained as a result of dependable Essex delivery of integrated electrical components.

Learn how Essex Single Source Service can work to your advantage. Call your local Essex application specialist today for details on this practical component purchasing plan!

**ESSEX**  
SINGLE SOURCE

**ESSEX WIRE CORPORATION**  
Fort Wayne, Indiana



For More Information Write No. 187 on Inquiry Card—Page 32

# NEW

## CLEVELAND

### 6 FLUTE HEAVY DUTY END MILLS

- For heavy duty applications which require larger radii in pocket bottoms and corners.
- Can be operated at higher feeds than 2-flute end mills, with less vibration and tooth impact.
- Will remove maximum amounts of metal with a minimum of cutting edge wear.
- Give superior performance in both plunge cutting and traverse cuts.



TELEPHONE YOUR INDUSTRIAL SUPPLY DISTRIBUTOR  
for CLEVELAND  Quality Tools... prompt delivery from stock

The complete line of  
**CLEVELAND**  
**HEAVY DUTY**  
**END MILLS**  
with DUO-DRIVE Shanks

For removing the maximum amount of metal at high feed rates, with minimum cutting edge wear.

**THE CLEVELAND TWIST DRILL CO.**  
1242 East 49th Street • Cleveland 14, Ohio

Stockrooms: New York • Atlanta • Cleveland • Detroit • Chicago • Dallas • Los Angeles • San Francisco

For More Information Write No. 188 on Inquiry Card—Page 32

MAY 11, 1959

One order, one source  
... every fastener need



## Full Line... Fast Service!

Good service you can count on... our reputation is built on it. With the ever increasing demands of industry, a dependable balanced inventory is a foremost consideration. Screw and Bolt Corporation of America meets all your needs—from a complete line of quality industrial fasteners, personalized service, and with a network of leading distributors and strategically located warehouses.

Keep us in mind, one call can do it all.

VMA 6844

**SCREW AND BOLT CORPORATION  
OF AMERICA** P. O. Box 1708  
Pittsburgh 30, Pa.

Formerly  
Pittsburgh Screw and Bolt  
Corporation



America's Most Complete Line of Industrial Fasteners

## Letters To The Editor

### HERE AND THERE

Dear Sir:

I was interested to read the letter to the editor, "Quantity Discounts" in the February 16 issue. It seems to me that Mr. Kirkish puts his finger on a most important point.

All too often over here (and seemingly in the States also) the cost of an order is arrived at by totalling the costs of the purchasing department and dividing by the number of orders issued. Just recently I was present at a meeting at which a management consultant defended this practice on the grounds that although the result was inaccurate it was better than no information at all.

I submit, however, that this method gives so misleading a result as to be valueless, and if one is going to use the cost of placing an order in a formula designed to assess when and how much to buy, such inaccuracy makes nonsense of the whole calculation.

The costs of placing an order are related to the type of commodity being ordered. For instance, a large spare part for a rolling mill will take many hours of a buyers' time, while an order for a few drills is really a clerical operation requiring little more than the time of the typist. The cost of the latter will be only a few pence, but the former will run into many pounds.

In my experience, the best course is to group purchases into categories which attract varying degrees of buyers' time and work out the purchase department cost for each group. But this still does not give the cost of placing an order.

One must consider the costs involved in requisitioning, in receiving the goods, in passing the invoice, and in progressing delivery. Here again the type of goods categorizes the amount of time for these operations.

While it is a lengthy business to approach the problem in this way, it has only to be done once, and when it is done the results become realistic and can be used

with confidence in calculations to determine when and how much to buy.

A. L. Beard  
Chief Buyer

The Steel Company of Wales Ltd.  
Port Talbot, Glamorgan  
Great Britain

### A P.A. BY ANY OTHER NAME . . .

Dear Sir:

The first question in your questionnaire [See Purchasing Opinion, March 16 issue] is the key to all of the answers.

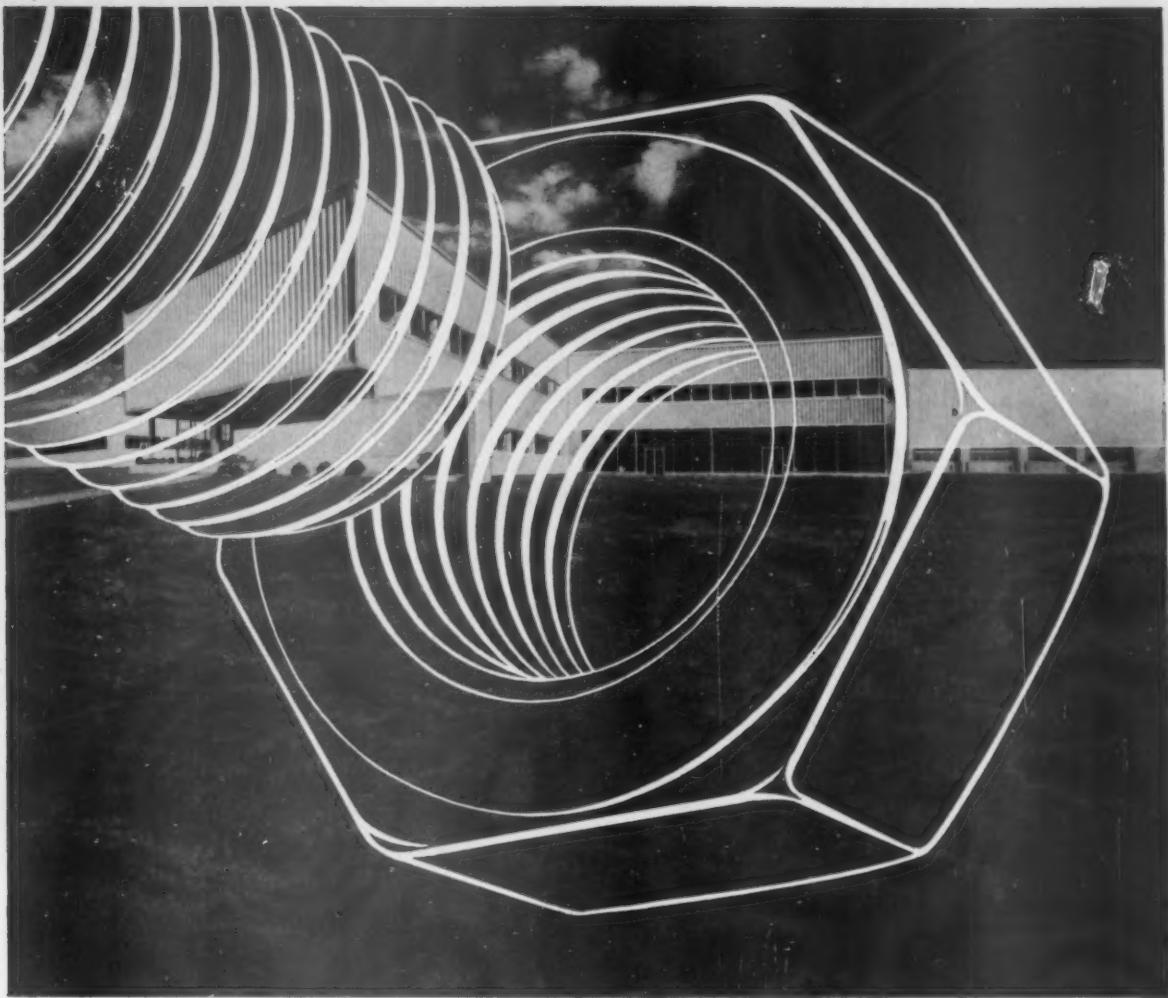
Before I can intelligently answer whether the materials management concept is gaining wider acceptance in industry, I have to know what is meant by materials management.

Many companies have individual materials management philosophies which they have adopted. But the extent of management and the activities included as part of their materials management varies widely.

Our company has had materials management under its manager of purchases for a good many years. Our traffic operations, salvage operations, the inspection and standards operations have been a part of the purchasing responsibilities for a long time. Just within the past year we have become responsible for inventory control. This has not always been so in many other companies and now that purchasing is being charged with these responsibilities, somebody decides a new name is in order—Materials Management.

Some companies include receiving, shipping, warehousing, and perhaps even production materials control. As far as I am concerned, shipping, receiving, and warehousing are custodial activities that certainly do not enhance the job of a purchasing manager. I can find no justifiable basis for the control of materials in process by anyone other than the production manager. Suggestions and advice, yes, but control, I am not so sure.

So while I think the materials management approach may be



## A new name for a dependable old friend

On April 15, Pittsburgh Screw and Bolt shareholders voted to change their company's name to Screw and Bolt Corporation of America.

This new name clearly reflects our continuous expansion and diversification to service the ever increasing and rapidly changing needs of our customers. Today, with four major divisions and plants from Texas to Connecticut, our national scope of business has earned for us the reputation as producers of "America's most complete line of industrial fasteners."

In keeping with this progress, our new, fully integrated Pittsburgh plant, covering—under a single roof—an area equivalent in size to ten football fields . . . offers the utmost in operating efficiency. It is representative of the modern facilities and up-to-date production techniques that keep our quality tops and our service prompt.

We are happy to announce this name change to our many friends and look forward to serve you under our new banner . . . Screw and Bolt Corporation of America.

VMA 6710

## SCREW AND BOLT CORPORATION OF AMERICA

*Formerly Pittsburgh Screw and Bolt Corporation*

• P. O. Box 1708

Pittsburgh 30, Pennsylvania

**DIVISIONS:** Pittsburgh • Gary Screw and Bolt • Southington Hardware • American Equipment

**AMERICA'S MOST COMPLETE LINE OF INDUSTRIAL FASTENERS**

For More Information Write No. 189 on Inquiry Card—Page 32

MAY 11, 1959

51

# FIR PLYWOOD PURCHASING GUIDE

## 1. Insist on DFPA Grade-Trademarks

DFPA grade-trademarks attest quality, performance and value. They appear only on plywood manufactured, inspected and laboratory-tested under the DFPA quality control program to assure conformance to U.S. Commercial Standard quality requirements.



## 2. Choose the right grade for each job

DFPA quality-tested fir plywood comes in two types: 1. *Exterior* (waterproof glue for permanent outdoor exposure); 2. *Interior* (moisture-resistant glue) for use indoors, temporary outdoor uses and sheathing.

Within each type are *appearance grades* to meet the exact needs of any given job. Most popular grades are shown below: (other grades including panels made of other western softwoods, also available)

TYPICAL USE	EXTERIOR-TYPE (Waterproof glue)	INTERIOR-TYPE (Moisture-resistant glue)
Where appearance of both sides important. Cabinet doors, single thickness walls, etc.	EXT-DFPA-A-A	INTERIOR-A-A-DFPA
Where only one side will be seen. Siding, paneling, signs, fixtures.	PlyShield® (A-C)	PlyPanel® (A-D)
Special concrete form grades. Both faces sound, solid, smooth.	Ext. PlyForm® (B-B) Maximum Re-use	Int. PlyForm® (B-B) Multiple Re-use
Unsanded structural and maintenance panel. Sheathing, crating, temporary screening.	Exterior Glue PlyScord® (C-D)	PlyScord® (C-D)

**SIZES:** Standard fir plywood thicknesses are from  $\frac{1}{4}$ " through  $\frac{3}{4}$ "; standard size is 4' wide, 8' long. Other thicknesses and sizes are also available, including "king-size" scarfed panels up to 30' and 50' long.

**TEXTURED FIR PLYWOOD** — Fir plywood comes in several smart textured panels for special decorative applications such as siding, paneling, displays and fixtures. These include *Texture One-Eleven* Exterior plywood (deep parallel grove pattern, shiplapped edges), and panels with attractive *brushed, striated, or embossed* surfaces.

**OVERLAI FIR PLYWOOD** — is Exterior fir plywood with resin-fiber overlay permanently fused to one or both sides of panel. *High density* is hard, glossy, abrasion-resistant (use for long-lasting signs, shelving, concrete forms); *Medium density* overlaid plywood is smooth, with texture similar to drawing paper (ideal paint base for signs, fixtures, siding).



**FREE WALL HANGERS** — Handsome 18"x33" wall hanger. Handy fir plywood grade-use-specification guide. Order one for everyone in your firm who specifies fir plywood. Also available, specification portfolio. Includes detailed description all grades, sizes, specialty panels, Commercial Standards requirements. Offer good USA only. Douglas Fir Plywood Assoc., Tacoma 2, Wash., Dept. 192.

For More Information Write No. 190 on Inquiry Card—Page 32

## Letters

getting more publicity and that more companies are changing titles to conform, I am not sure that any significant change in the way companies are operating is taking place. I say this in spite of all the very fine articles I have read in PURCHASING Magazine.

Question No. 2 presupposes that the answer to the first question is "yes." Since I cannot completely buy a "yes" I am going to hedge a little. It is an unhealthy trend when the purchasing head is not prepared to become the materials manager. He has either qualified himself for the broader responsibility or not. If he is not qualified, then in the best interests of his company he probably should be subordinated to someone who is qualified. If he is qualified, obviously his appointment enhances the whole position of purchasing since it makes known that the purchasing department is the channel through which management moves men to the top materials responsibility.

In answering Question No. 3, I think that all of the reasons given are significant and important. I favor the idea that the responsibility for materials is pinpointed.

As to Question No. 4, I do not see any disadvantages to materials management where it becomes the responsibility of the top purchasing man. Purchasing only loses stature under the materials management concept (and this is regrettable rather than a disadvantage) when purchasing is not prepared to assume the broadened role.

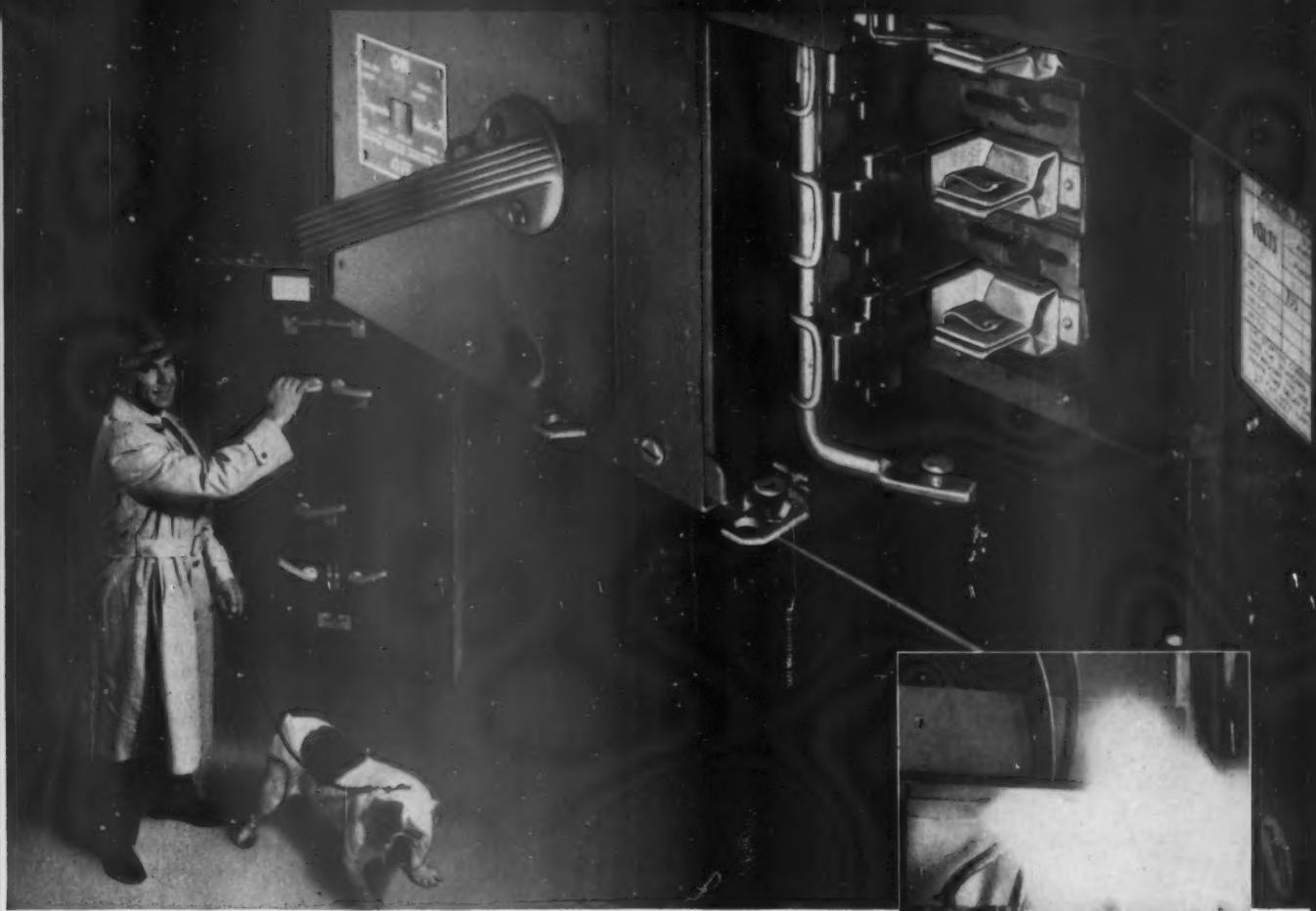
We at Detroit Edison have had a form of materials management as part of our purchasing operations for many years.

In reply to Question No. 6, I am sure that the most effective way for purchasing to assume a broader role in the materials management picture is by performance. Build a good organization, train competent people, and do the best job possible—that is the only way to convince management that purchasing can assume

For More Information Write No. 191

on Inquiry Card—Page 32→

PURCHASING



## FOR SAFETY'S SAKE, BUY VACU-BREAK POWER PANELS

Here are some basic facts why BullDog Power Panels with Vacu-Break\* units are tops in safety and performance. Vacu-Break design minimizes destructive arcs because contacts are housed in compact chambers that extinguish the arcs immediately. Result: maximum safety . . . virtually no pitting or burning of contacts . . . minimum maintenance. Vacu-Break switch units are "quick-make, quick-break" with an interlocking safety mechanism. Contacts are *directly* attached to operating handle. No tricky toggles or springs. You get positive, safe switching always. And when the handle is in OFF position, you *know* the switch is off!

The Clampmatic\* design provides clamped-pressure switching con-

tacts to prevent overheating at these points. Needless heat-generating areas are eliminated because there are no hinged, current carrying parts . . . and all conductors are silvered. BullDog switches also withstand severe fault currents. In recent tests, standard BullDog switches with Amp-Traps\*\* were subjected to a 100,000-amp short circuit current. *They were undamaged!*

For safety's sake—and superior performance—specify BullDog Vacu-Break Power Panels.

Dangerous flash explosion occurs at instant of "break" in open knifeblade switch . . . causing blades to burn, pit, deteriorate. (This photograph and the one below are unretouched.)



BullDog Vacu-Break chamber smothers arcs before they can cause damage. Both are 100-amp, 600-volt switches, operating under 90-ampere, 440-volt load with 40% to 50% power factor.



**BULLDOG ELECTRIC PRODUCTS DIVISION**  
**I-T-E CIRCUIT BREAKER COMPANY**  
BOX 177 • DETROIT 32, MICHIGAN

In Canada: 80 Clayton Rd., Toronto 15, Ont. Export Division: 13 East 40th St., New York 16, N.Y.

\*Vacu-Break and Clampmatic are registered trademarks of the BullDog Electric Products Division. \*\*Amp-Trap is a registered trademark of the Chase-Shawmut Company.

# STAINLESS STEEL STRIP



## THROUGH SUPERB FACILITIES . . . SUPERB QUALITY and DEPENDABLE DELIVERY

What do Wallingford Steel's new facilities—a new metallurgical laboratory, Sendzimir Mill installations, and automation gaging systems—mean to you, the user?

They mean *better* flexibility in the scheduling and delivery of strip to help you schedule your production more efficiently.

They mean *better* stainless steel and super metals with uniform quality and gage, lustrous finish, and exceptional resistance to high heat, corrosion and wear. Our exceptionally rigid quality control—X-ray gaging for strip thickness, sensitive elongation gaging for rolling operations—and laboratory sampling of our strip before shipping, assure you stainless strip which is unsurpassed.

In summary, the stainless steel strip you need when you need it!

**FACILITIES FOR WIDTHS UP TO 27"—THICKNESSES DOWN TO .001"—EXTREMELY CLOSE TOLERANCES MAINTAINED**

Write for complete data.

**THE WALLINGFORD STEEL CO.**

Progress in Metals for over 37 Years

**WALLINGFORD, CONN., U.S.A.**

COLD ROLLED STRIP: Super Metals, Stainless, Alloy

WELDED TUBES AND PIPE: Super Metals, Stainless, Alloy



For More Information Write No. 192 on Inquiry Card—Page 32

## Letters

the responsibility.

As I have already mentioned, I think our management has a broader materials management concept than many companies have had, and we have had it for years. We have a vice president heading our operations so I do not know how much higher or how much more recognition we should expect.

W. J. Pierce  
Staff Assistant  
Purchasing Department  
The Detroit Edison Company  
Detroit, Michigan

## A SPEED UP OF THE SLOW DOWN

Dear Sir:

One overlooked factor in the mounting costs of purchasing can be attributed to the curious and almost incomprehensible apathy which seems to have pervaded various sales organizations and clerical forces responsible for direct contact with customers.

Requests for information, prices, delivery, etc. are, in many cases, either ignored entirely or only answered after several follow-up letters have been sent.

We thought this practice would change in "recession times." But the need for selling and servicing customers seems to have been overlooked by the rank and file of the hordes of clerks in direct proportion to "Parkinson's Law."

It is surprising how many of the top names in every industry are guilty of the practice of either ignoring customer's inquiries or delaying replies to the point of frustration.

L. de Polac  
Purchasing Agent  
National Lead Company  
Tahawus, New York

• *Mr. de Polac has hit upon something that seems to be bothering a lot of purchasing people. PURCHASING's editors, in traveling around the country, have heard numerous comments along these same lines. We would be extremely interested in learning of any other experiences (pro or con) with this problem.*

Sam—  
Let's check into this!  
maybe we ought to  
try 'em  
Bill



### For ECONOMY...get NIBROC® HI-Dry Towels

Savingest towel ever  Exclusive Hi-Dry fibres truly soak up water in a flash  Keep Nibroc Towels extra strong when wet  Waste is cut to the bone  Annual towel costs will show real savings

Next time get Nibroc Hi-Dry Towels.

Another Quality Product of BROWN COMPANY

See "Paper Towels" in Yellow Pages,  
or write Dept. 60, Boston, for samples.

Mills: Berlin and Gorham, N. H.  
General Sales Offices: 150 Causeway Street, Boston 14, Mass.



**PROCRASTINATION WON'T HELP  
YOU SAVE, BUT NIBROC WILL!** MAIL  
THE COUPON today for samples, complete informa-  
tion and name of your nearest Nibroc dealer. Check  
also for a Customer Service set of 8 Washroom  
Posters that will help you cut towel consumption  
—reduce maintenance.

#### BROWN COMPANY

Towel Sales Division, Dept. NG-5, 150 Causeway St., Boston 14, Mass.

Send samples and complete information  Send me set of Posters

NAME \_\_\_\_\_ TITLE \_\_\_\_\_

FIRM \_\_\_\_\_

STREET \_\_\_\_\_

CITY \_\_\_\_\_ ZONE \_\_\_\_\_ STATE \_\_\_\_\_

For More Information Write No. 193 on Inquiry Card—Page 32

MAY 11, 1959

**POWER UP!** calls for  
modern maintenance



## New Super Coilife gives rewound motors extra life

Moisture, acids, alkalis and other contaminants are locked out once and for all with Super Coilife epoxy encapsulation. For full motor protection, Super Coilife can be applied to random wound stators, rotors and armatures. Super Coilife's mirror-like finish will not crack or craze under severe operating conditions.

Because of its unusually low viscosity, this new solventless epoxy completely penetrates the interstices, through the slots, thoroughly coating and protecting the windings. Since 1953, when Westinghouse introduced Coilife\* epoxy encapsulation, research, engineering and development have evolved this new and improved product—Super Coilife, an exclusive process.

Only Westinghouse Repair Plants can give the right "thin-wall" thickness for each type and class of winding to give maximum heat transfer away from the windings. Before you send out your next rewind call your Westinghouse representative for the complete story or write for Booklet B-7622: Westinghouse Electric Corporation, P. O. Box 868, 3 Gateway Center, Pittsburgh 30, Pa.

\*Trade-Mark

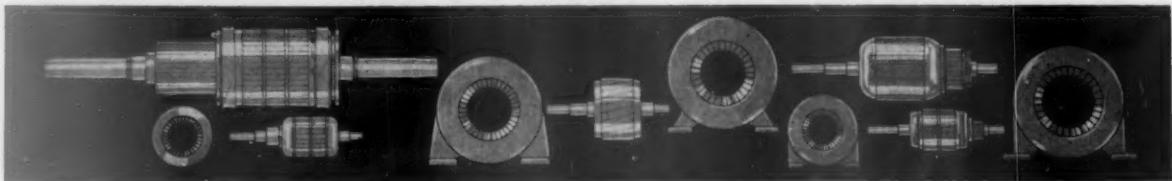
J-95197-A

YOU CAN BE SURE...IF IT'S

# Westinghouse

WATCH "WESTINGHOUSE LUCILLE BALL-DESI ARNAZ SHOWS" CBS TV MONDAYS

USE WESTINGHOUSE MODERN MAINTENANCE SERVICE... SHOP REPAIRS... RENEWAL PARTS... FIELD SERVICE



For More Information Write No. 194 on Inquiry Card—Page 32

## Purchasing People In The News

**John T. Andrews** has been named general purchasing agent of Bird & Son, Inc., East Walpole, Mass. He succeeds Howard S. Hanna who retired. **Herbert W. Church** has been promoted to assistant purchasing agent and **Arthur E. Plummer** assistant to the purchasing agent. Mr. Andrews' career with Bird & Son started in 1927 in the company's accounting department. After



**John T. Andrews**

serving some years as assistant cost accountant he transferred to the purchasing department in 1949. He has been serving as assistant purchasing agent since January, 1953. Mr. Church came to the company in 1950 in the cost accounting department. He transferred to the purchasing department in 1953. He was named assistant the purchasing agent in 1955. Mr. Plummer joined Bird & Son's purchasing department in 1955. He became a buyer in 1956. the position he has held until his recent promotion.

**Don Swanson** has been promoted to an assistant buyer for the **Maytag Company, Newton, Iowa**. Mr. Swanson has been a general trainee at the company since last September.

**Dry-Brite Lighting, Inc., St. Louis, Mo.**, has announced the appointment of **D. M. Baker** as general manager of purchasing. The appointment is in line with the expansion of the company's purchasing needs. Mr. Baker will



**D. M. Baker**

coordinate and administer the purchasing activities of all Day-Brite plants while continuing as purchasing agent in St. Louis. **M. F. Pilgrim** has been added as purchasing agent at the **Tupelo, Miss. plant**. **J. Coffey** carries out the purchasing functions of the plant in Santa Clara, Calif. Mr. Baker came to Day-Brite in 1934 from Lighting Specialties Company, Chicago. His experience also includes railroad claims processing and other traffic responsibilities. For a number of years he has participated in the affairs of the National Association of Purchasing Agents. He was president of the St. Louis Association in 1949-50. At present he is a member of the Steel Committee and the Educational Committee (Literature Review Division) of the National Association.

**Lawrence F. Baumgartner** has been named purchasing agent of



**L. F. Baumgartner**

the **Formica Corporation, Cincinnati, Ohio**. Mr. Baumgartner succeeds **J. Henry Heitbrink** who retired April 1st. Mr. Baumgartner has been in the purchasing department of the company for the past 19 years. He is a member of the Cincinnati Association of Purchasing Agents.

**Harry L. Wieck**, formerly foreman of the Formica Machine Shop, will assume Mr. Baumgartner's duties as production material buyer.

**E. R. Humann**, president of **Airco Company International**, the export division of **Air Reduction**



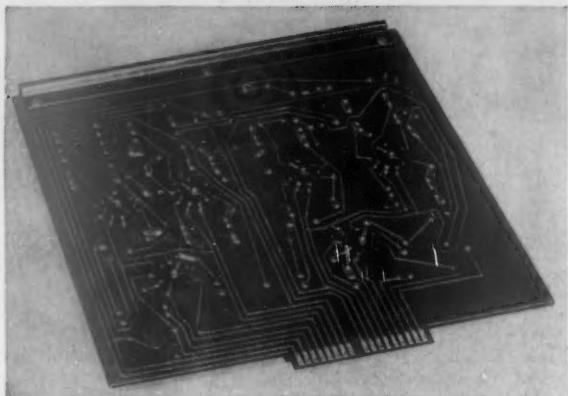
**E. R. Humann**

**Company, Incorporated**, has been appointed director of purchases of the parent organization. He will be located in the company's New York City headquarters.

**A.S.R. Products Corporation, Staunton, Va.**, announced the appointment of **Howard A. Beiseigel** as purchasing agent. Mr. Beiseigel who joined the corporation in 1955, was most recently manager of product quality. **Robert A. Skead**, the present purchasing agent, will assume the duties of marketing coordinator for the company. He will be located in the New York City office.

**SEE PAGE 182 FOR MORE PURCHASING PEOPLE IN THE NEWS**

# CDF PLASTICS AND FIBRE



Heart of the best printed circuits—

## CDF Di-Clad® LAMINATES

Printed-circuit dependability begins at the base, and that's where CDF excels. Only CDF offers the combination of Teflon® resin and glass fabric cloth for use under sustained temperatures of 180°C. In addition, CDF offers a full range of Di-Clad laminates to meet every known demand of printed circuitry. High foil-bond strengths withstand soldering heats, reduce assembly rejects. Full line of Di-Clad grades — glass fabric and paper-base — with Teflon®, epoxy, and phenolic resins. Assembly costs go down when the job is done on CDF Di-Clads! Write for CDF Di-Clad Folder DC-58.

\*duPont trademark for its tetrafluoroethylene resin

## CDF PRODUCTS OF TEFLON

CDF produces an unequalled range of electromechanical parts of Teflon® — such as small- and large-diameter thin-wall tubing, glass-fabric laminates, flexible insulating tapes, sheets, rods, tubes, and finished parts. Now also available: cementable Teflon in supported and unsupported forms; can be cemented to itself and to most other materials with commercial adhesives. If you have a potential use for a product made from unsupported or reinforced Teflon — from tapes to high-heat-resistant printed-circuit laminates — your CDF sales engineer is the man to call. Meanwhile, write for the new CDF Teflon Folders.

\*duPont trademark for its tetrafluoroethylene resin



### CDF HIGH-HEAT ELECTRICAL TAPES

Flexible insulating tapes for hand or automatic winding, made of glass-supported silicone rubber, silicone varnish, Micabond, with and without backings; and unsupported and glass-supported Teflon®. Color identification — CDF tapes of Teflon are made in the standard identifying colors. Call your CDF sales engineer, or write for test samples.

\*duPont trademark for its tetrafluoroethylene resin



### DIAMOND VULCANIZED® FIBRE

#### keeps costs down

Known for over sixty years as the standard of quality in fibre, Diamond® Vulcanized Fibre is made in many grades (bone, fish-paper, trunk, commercial, built-up) and is available in sheets, rods, tubes, strips, rolls, fabricated parts, and formed specialties. Write for Catalog DVF-58.

**LOW-COST VULCOID** is Resin-impregnated Vulcanized Fibre. Vulcoid (made only by CDF) is an intermediate insulation material. It combines the desirable arc-resistance and mechanical properties of vulcanized fibre with many of the good qualities of a phenolic laminate. UL-approved as Class A insulation in electrical equipment. Bearing applications requiring high precision have been successful with Vulcoid. Write for Bulletin V-58.



### CDF CELORON® MOLDED PRODUCTS

Celoron is a molded-macerated and/or combination laminated base bonded with phenolic resins. High strength, long life, and low cost are the characteristics of molded electrical or mechanical parts made from CDF Celoron®. Its good electrical properties make Celoron an ideal molded insulator, while its high mechanical strength makes it an excellent material for gears, couplings, intricate loom parts, etc. Write for CDF Catalog C-58, or contact your nearest CDF sales engineer.

# PURCHASING NEWS



## CDF DILECTO® LAMINATED PLASTICS

### for electrical and mechanical applications

DILECTO®, made in scores of grades, means high-quality laminated plastics made for rigorous duty in electrical, electronic, and mechanical equipment. Characteristics vary with the grade, so get the expert assistance of your CDF sales engineer.

#### RESINS AVAILABLE IN DILECTO:

Phenolic  
Heat-resistant Phenolic  
Silicone

Epoxy  
Melamine

Polyester  
Teflon\*



Glass Fabric  
Nylon Fabric  
Asbestos Fabric  
Cotton Fabric

CDF gives fast technical and delivery service on sheets, tubes, rods, or complete fabricated parts of Dilecto plastics. Write for Catalog D-55-C.

\*duPont trademark for its tetrafluoroethylene resin

#### BASES FOR DILECTO:

Glass Mat  
Felted Asbestos  
Non-woven Cotton Mat  
Paper (either cellulose or asbestos)

### For a better motor or generator —



**CDF**  
**MICABOND®**  
**INSULATING**  
**PARTS**

CDF mica V-rings and slot liners insulate America's best-selling motors and generators. Finest-quality mica splittings insure highest heat-resistance and insulation under severe operating conditions.

Forms of Micabond® available: Sheets; Tubing; Tapes (with backings of cotton, silk, paper, woven glass, and Mylar® polyester film); Fabricated Parts of various shapes such as Mica segments. CDF supplies and fabricates Micabond to your strictest specifications — on time and at low cost. Call your CDF sales engineer or write for samples of Micabond and Catalog M-58.

\*duPont trademark



**PLASTICS**  
**FABRICATION**  
**BY CDF**

### SAVES YOU TIME, MONEY, WORRY

Let CDF's well-equipped machine shops assume the complete responsibility for delivery of your fabricated parts as specified and on time. No time is lost at CDF between raw-material production and final fabrication. When you let CDF do it for you, there's no problem of shortages, rejects, waste. Undivided responsibility pays off for you!

### THERE'S A CDF SALES OFFICE NEAR YOU

BALTIMORE 14, MD. NOrthfield 5-0964  
2451 Ellis Road  
BIRMINGHAM 6, ALA. VErnon 3-5713  
110 95th Street, N.  
BOSTON GRanite 2-2150  
1245 Hancock St., Quincy 69, Mass.  
BUFFALO 3, N.Y. WAshington 3929  
495 Elliott Square Building  
CHICAGO 11, ILL. DElaware 7-6266  
1201 Palmolive Building  
CLEVELAND 14, OHIO CCherry 1-5220  
550 Leader Building  
DAYTON 3, OHIO KEnmore 3114  
39 N. Torrence St.  
DENVER 2, COLO. ACome 2-2236  
260 Denver Club Bldg.  
DETROIT 35, MICH. BRoadway 3-0447  
201 Officenter Bldg.  
EXPORT DEPARTMENT: BRIDGEPORT PENNSYLVANIA, U.S.A.

FT. WORTH 7, TEXAS FAnnin 3339  
3414 Camp Bowie  
GREENSBORO, N.C. BRoadway 4-0226  
2103 Mimosa Drive  
HARTFORD Hartford-Jackson 9-0397  
15 Harding St., Wethersfield 9, Conn.  
HOUSTON 27, TEXAS JAckson 3-9254  
3302 Mercer Street  
INDIANAPOLIS 5, IND. WAlnut 5-9883  
709 East 38th St.  
KANSAS CITY 11, MO. LOnan 1-6014  
406 West 34th St.  
LOS ANGELES  
3141 Century Blvd. ORchard 3-2266  
Inglewood 4, Calif.  
MILWAUKEE 19, WIS. ORegon 8-5476  
6108 W. Lincoln Ave.  
Lincoln 1-7660

MINNEAPOLIS 2, MINN. FEderal 3-6666  
610 Plymouth Bldg. -3388  
NEW YORK SCarsdale 5-1600  
2 Overhill Rd., Scarsdale, N.Y.  
OMAHA 3, NEBRASKA ATlantic 6548  
110 North 40th St.  
ORLANDO, FLA. CCherry 1-3774  
2418 Rosedale St.  
PHILADELPHIA  
Bridgeport, Pa. BRownstown-  
PHOENIX, ARIZONA 5-0800  
P.O. Box 1587  
PITTSBURGH 2, PA. CChurchill 1-0969  
300 Shields Bldg.  
ST. LOUIS 10, MO. MIssion 5-2253  
1246 Hampton Ave.  
SPARTANBURG, S.C. 834 Hayne Street SPartanburg 3-6397

TULSA, OKLAHOMA LUther 7-6189  
204 S. Cheyenne St.

#### Pacific Coast Representatives

MARWOOD LIMITED  
SAN FRANCISCO 3, CALIF.  
357 Ninth Street HEmlock 1-7893  
SEATTLE 4, WASHINGTON MAin 3-4747  
1714 First Ave. S.  
PORTLAND 4, OREGON CApital 3-5123  
209 S. W. First Ave.  
LOS ANGELES 18, CALIF.  
230 East 3rd Street MADison, 8-3241

In Canada  
DIAMOND STATE FIBRE CO. OF  
CANADA, LTD.  
46 Hollinger Rd., Toronto 13, Ontario, Can.



## CONTINENTAL-DIAMOND FIBRE

A SUBSIDIARY OF THE COMPANY • NEWARK 41, DELAWARE

For More Information Write No. 195 on Inquiry Card—Page 32



Manufacturers of  
Cold Headed  
Fasteners  
Since 1888

OVER 5 TIMES  
THE RATE  
AT 45% LESS COST



Another example of how  
Hubbell Cold Heading  
produces Better Parts at  
Faster Speeds, at Lower Cost

**THE PART:**

Special 1-64 Miniature Binding Screw

**THE MATERIAL:**

18-8 High Tensile Stainless Steel

**THE METHOD:**

Hubbell Cold Heading in place of screw  
machining

**THE RESULT:**

a. Production increased from original  
rate of 7000 pc. p.d. to cold heading  
rate of 40,000 pc. p.d.

b. Cost reduced 45%

c. Finer Quality—More Economical  
Production

1. Higher Tensile Strength
2. Cleaner, Stronger Threads
3. No Scrap Waste
4. No Separation from Chips

Hubbell Cold Heading may provide equally dramatic results for you. Whether it is presently cold headed or not, send blueprint of part or sample for analysis and estimate.

**HARVEY HUBBELL, Inc., Machine Screw Dept.**  
Bridgeport 2, Connecticut

Kindly estimate on the enclosed  
Sample (Blueprint). Quantity \_\_\_\_\_

Name \_\_\_\_\_  
Title \_\_\_\_\_  
Company \_\_\_\_\_  
Address \_\_\_\_\_

For More Information Write No. 196  
on Inquiry Card—Page 32

## FOB—"filosofy of buying"

ARE YOU one of those who more or less scoff at the idea that value analysis, standardization, etc. can be used effectively by small purchasing departments operated on limited budgets? City Purchasing Agent John Krieg of Cincinnati says it isn't so and backs up the statement in his 1958 Annual Report, just released. Among some of the more intriguing items reported under savings:

The department buys Reserpine, a drug used extensively in the treatment of hypertension. Normal "wholesale" price of the drug was \$39.50 per thousand tablets. By developing the widest possible competition, the drug buyer brought the price to the city down to \$7.50 per thousand.

Certain city departments require sod in their operations. Purchasing had difficulty in getting bids and delivery on the item. Analysis showed that it was being requisitioned in sizes that could not be cut by machine. Using departments were persuaded to change to standard dimensions. The city got greater competition and the cost of the sod was cut in half.

ADD BILL SCHELBE to the list of purchasing executives publicized by their companies as key men in providing better quality and service to customers. A brochure, "Men of Wolverine (Tube)", says Director of Purchases Schelbe "has an eye for quality and is constantly looking for improvements which will reflect in better products for Wolverine customers." That search for value apparently is a full-time job with Bill—he's also chairman of the Value Analysis-Standardization Committee of the Purchasing Agents Association of Detroit.

• • •

HERE'S NEWS in the construction field, but we're having trouble deciding whether it's good or bad. An atomic blast and fallout shelter has been built into a remodeled New York apartment house. The owner of the building told a reporter that he and his architect were just feeling their way on the shelter. "The important thing," he said, "is to wake up the people." Then he revealed that he is moving his family from his home in the Bronx to another Manhattan apartment house. It has no shelter.

• • •

THE BRITISH often compliment us Americans on our imaginative, enterprising approach to things—and go quietly on being more imaginative and more enterprising than everybody else. The latest move of the Purchasing Officers Association is a case in point. It has just treated itself to a Coat of Arms as an indication to the outside world, in the words of Director and Secretary John Blinch, "of the increased status and dignity which we feel purchasing has earned in Britain."

POA marked the event with what must have been a brilliant dinner at Stationers' Hall in the City of London. Among the toasts was one to the President of the

United States. This was offered in deference to Captain D.C. Mackenzie, officer in charge of U.S. Navy purchasing in London, who recently joined the Association. President C. F. Huebner was chairman of the affair.

We're sorry we can't reproduce the brilliant red, blue, yellow and green of POA's Blazon, or Coat of Arms, but there's enough in the illustration below to give you the general idea.



The bar across the center of the shield alludes to the Association's concern with contract, being an exact picture of the division of an indenture, the epitome of contractual relationship. The three purses on the shield symbolize that the purchasing officer is the instrument by which money is spent to acquire goods.

The crest shows a richly vested (16th Century) hand and forearm holding a key with two wards, both in allusion to the Wardrobe. (The Association's headquarters are at Wardrobe Court, in London.)

The male griffins used as supporters are in legend guardians of treasure. Here they symbolize the care, vigilance and integrity that members of the Association exercise in their calling. They are further made distinctive by being charged with bezants or gold coins—alluding to the means by which the members carry on their work.

The key and purse combined in the badge suggest careful discharge of the purchasing functions of members as well as responsibility in regard to public money. They also repeat the allusions to the wardrobe.

The motto, "Pactum Serva", means "Keep thy Contract."

MAY 11, 1959

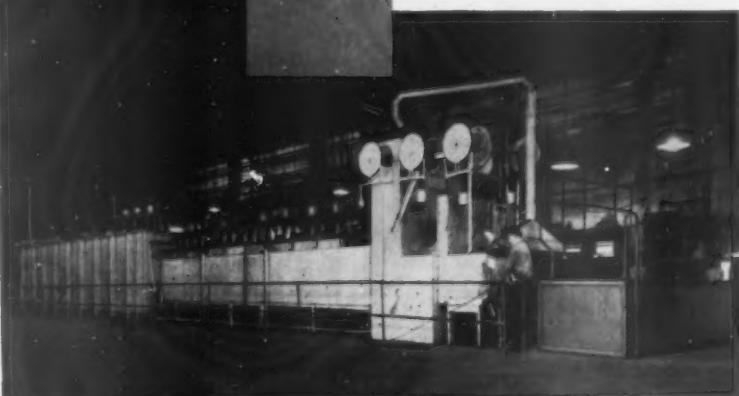
# If it's COPPER we have it!

If your call is for copper, call a nearby Hussey warehouse. Complete stocks of copper pipe, rods, bars, strip, sheets and many other necessities are ready for delivery in day-to-day quantities—or in production lots direct from the mill. Today's favorable copper prices make it easy to get the extra quality of copper as compared with other metals. Call Hussey today for mill or warehouse service on copper and brass products.



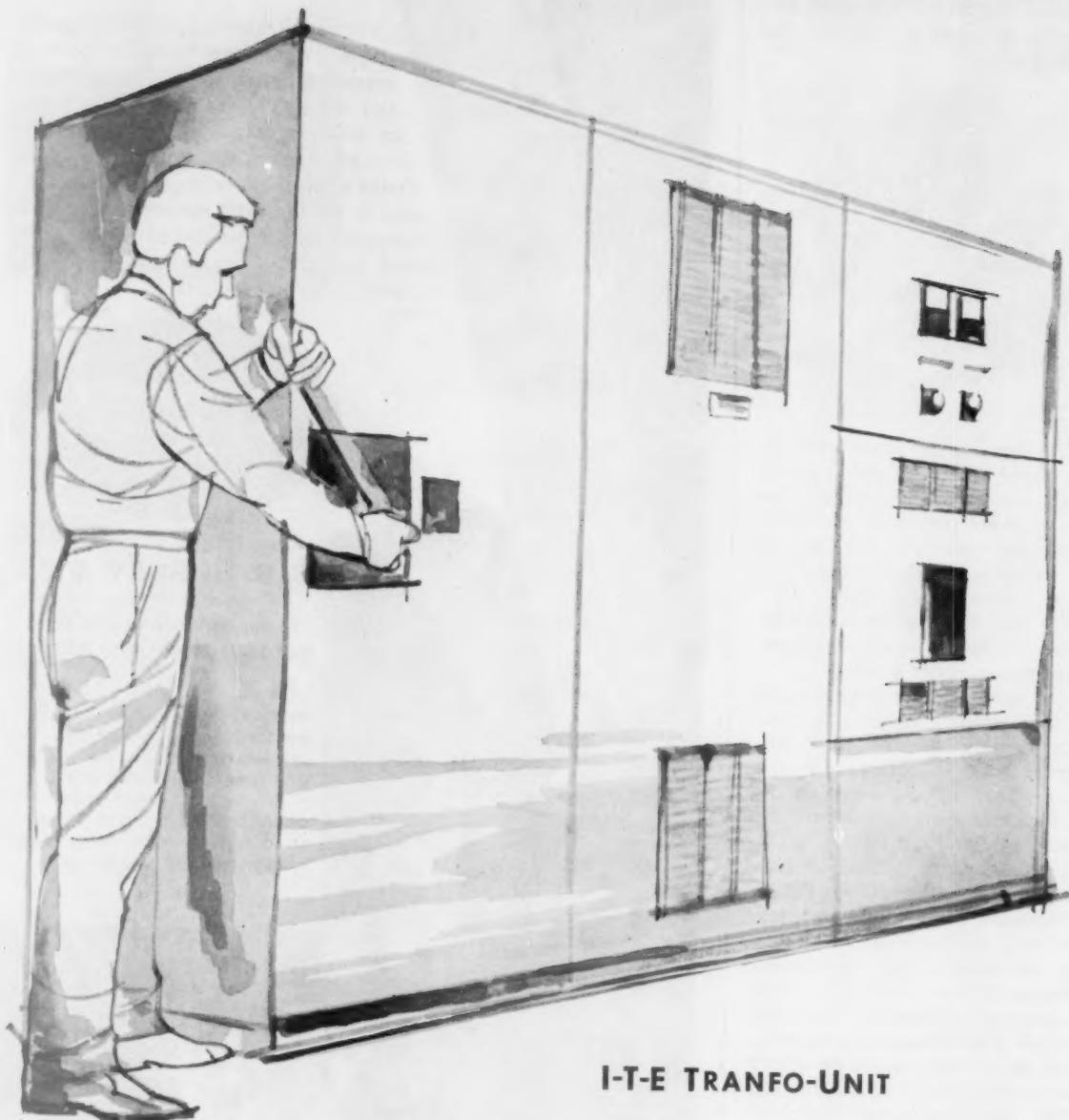
**C. G. HUSSEY & CO.**  
(Division of Copper Range Company)  
Rolling Mills and General Offices  
**PITTSBURGH 19, PENNA.**

Always a Warehouse near you  
**PITTSBURGH (19)..... 2850 Second Avenue**  
**CLEVELAND (3)..... 5318 St. Clair Avenue**  
**CINCINNATI (37)..... 1045 Meta Drive**  
**NEW YORK, LONG ISLAND CITY (6)**  
34-39 Thirty-first Street  
**CHICAGO (18)..... 3900 N. Elston Avenue**  
**ST. LOUIS (1)..... Central Terminal Building**  
**PHILADELPHIA (30)..... 1632 Fairmount Avenue**



For More Information Write No. 197 on Inquiry Card—Page 32

# NEAT



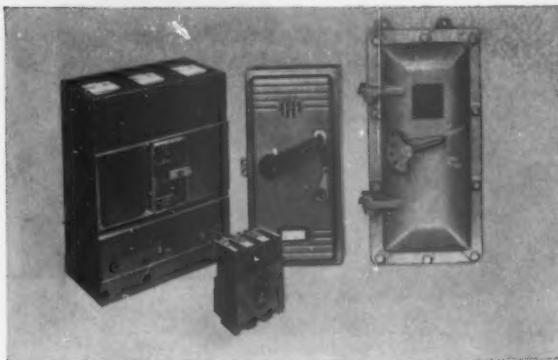
I-T-E TRANFO-UNIT

Believe it or not, the I-T-E TRANFO-UNIT illustrated at left is a *complete secondary unit substation*. It combines in one package the primary switch, transformer and secondary circuit breakers. And it costs no more than hodgepodge arrangements of assorted gear.

The TRANFO-UNIT is ideal for bringing high voltage power right up to load areas in industrial plants or for incoming power in many commercial buildings. Because it's completely self-contained, it's safe without a fence. It saves floor space.

And it gives a neat, clean appearance so important in modern buildings. Delivered complete, the TRANFO-UNIT simplifies ordering and reduces cost of installation. Available in ratings up to 3000 kva.

All of the major components of the TRANFO-UNIT are products of I-T-E. Marrying them together is the result of I-T-E engineering skill . . . and of our constant effort to offer you greater value in everything that bears the I-T-E name. Why not make us prove just how sincerely we can say this?



**First choice with electrical equipment manufacturers.** A generally acknowledged fact about I-T-E molded case circuit breakers is their popularity with electrical equipment manufacturers. This important group of circuit breaker specifiers consistently chooses I-T-E *more than any other brand*. There are several reasons. I-T-E offers the broadest line. Extra quality in numerous engineering and construction details actually costs you no more. And experience proves that it pays off in superior performance. Installation is particularly easy. Enclosures are available for individual breakers in a wide variety of indoor and outdoor types.



**High speed d-c protection.** A fault on d-c circuits involving electrolytic processes can in most cases produce runaway currents. But I-T-E Model FB d-c circuit breakers interrupt fault currents before they get into the danger area. Interruption occurs in roughly 12 milliseconds. Currents with rate of rise of even 15 million amperes per second are stopped at an approximate peak of 60,000 amperes. This means extra protection for all associated equipment from the damage that could result from even momentary persistence of such high currents. FB circuit breakers are available in either single or double pole. Compact. Easy to install.



**Safe passage for bus conductor.** I-T-E metal-enclosed bus is completely protected from the hazards of dirt and weather . . . and from the normal risks of accidental damage. Unlike cable, it endures the sieges of time without wear or insulation loss. Ideal for linking transformer to switchgear, for connecting switchgear assemblies, and for channeling large amounts of power through factories and office buildings, I-T-E nonsegregated phase bus never needs attention. At the same time it can be easily tapped into at a later date. Because it is delivered prefabricated from I-T-E, installation is easy and performance is assured.

**I-T-E Circuit Breaker Company**  
1900 Hamilton St., Philadelphia 30, Pa.

P-2

<input type="checkbox"/> TRANFO-UNITS	<input type="checkbox"/> Secondary unit substations
<input type="checkbox"/> Molded case circuit breakers	<input type="checkbox"/> Power switching centers
<input type="checkbox"/> D-c circuit breakers	<input type="checkbox"/> CORDON® circuit breakers
<input type="checkbox"/> Nonsegregated phase bus	<input type="checkbox"/> Other
<input type="checkbox"/> Metal-clad switchgear	
(4.16 and 13.8 kv)	

Name..... Title.....

Company.....

Street.....

City..... Zone..... State.....

**SEND COUPON OR WRITE**  
Get complete, up-to-date information  
on I-T-E equipment.



**I-T-E CIRCUIT BREAKER COMPANY**

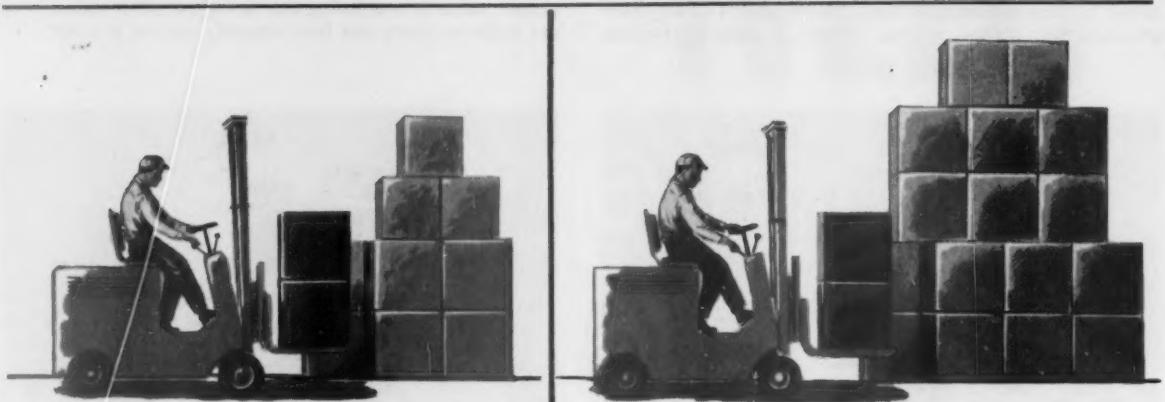
For More Information Write No. 198 on Inquiry Card—Page 32

MAY 11, 1959

63

# YOUR Electric Truck BATTERY

Exide Industrial Division, The Electric Storage Battery Company, Philadelphia 20, Pa.



Equip any electric industrial truck  
with an Exide-Ironclad Battery . . .

. . . and you boost its work capacity  
. . . earn a bigger investment return.

## EXTRA POWER IN EXIDE-IRONCLAD GETS YOU MORE WORK FROM YOUR PRESENT SIZE FLEET

Put a more powerful battery in any electric industrial truck and you boost its work capacity. Multiply the boost by the size of your fleet and you get an idea of just how much more valuable Exide-Ironclad Batteries can make your trucks.

Each Exide-Ironclad Battery now packs at least 25%, up to 44%, more power than the most powerful truck batteries previously sold. So if you want more truck work capacity, you can get it from your present size fleet. Equipped with new Exide-Ironclad Batteries, each of your present trucks can handle more per shift, move it farther, work longer hours . . . in other words, they can do more, much more, than they ever did before.

### Improved battery construction

Exide-Ironclad tubular plate batteries have proved their superiority in thou-

sands of applications. Today they feature new, more advanced tubular construction that dramatically improves performance and extends life potential. This is the latest step forward in the 50-year progress of Exide-Ironclad Batteries. The new armored porous tubing holds the active material even more firmly captive against loss. Greater porosity improves access of electrolyte for sustained high-load capacity. And inside, where vital current flows from the positive plates, Exide's patented Silvium alloy resists corrosion as much as 100% longer than other commonly used alloys.

Now each positive plate in Exide-Ironclad Batteries packs more power

For more details on the new Exide-Ironclad Batteries, write for a copy of our 8-page, illustrated brochure #6230

into the same battery space. Battery materials are used more efficiently for greater power per dollar. Here, truly, is today's outstanding battery value for electric industrial trucks.



50 years of constant improvement have gone into today's Exide-Ironclad Battery. Latest advance is the improved tubular construction of the positive plate. Skillful application of the most modern, virtually ageless, materials means longer-lasting battery power in industrial truck service than has ever before been possible.



### Exide Complete Power Package...includes chargers too

For all the value and economy Exide can offer you, make sure you get chargers from Exide too. That way, you get the complete Exide power package. New Exide vertical-design chargers are specifically designed for industrial truck use. Available in a full range of ratings for all trucks, and with operating features unmatched in the field. They save two-thirds in floor space required. Can be wall mounted. Operate cleaner, so

they need less upkeep. In addition, you get the advantage of reliable, thorough and regular Exide service for both batteries and chargers. Write for new brochure giving complete information.

# Exide®

For More Information Write No. 199 on Inquiry Card—Page 32

## Highlights of This Issue

### ✓ New Blood for Purchasing

When a division's purchases jump from a few million to over 100 million dollars a year within a relatively short time, strong, competent purchasing leadership is a must. Our latest company study deals with just such a situation and the steps that were taken to meet it. You'll get a good idea of what's in this comprehensive article from the section headings: When an Engineer Takes Over Purchasing; Purchasing Wants Suppliers That Act Like Buyers; Equipment Buying—A Job for Experts; How to Handle Some Touchy Purchasing Problems; A Plan for Purchasing Education.

See page 69.

### ✓ Purchasing On Trial

Every time a newspaperman or radio commentator splashes a business scandal across the pages or over the airwaves some of it spills onto the purchasing profession. Regardless of the facts, a large portion of the public still looks on all P.A.'s as the source—or at least the focal point of all evil in business shenanigans. Some suggestions for fighting this false impression are provided in an outspoken article.

See page 78.

### ✓ The Scope of Expediting

If expediting is important to you, you should know exactly who is doing it and how well, when it is being done, and how it is being done. Sound elementary? It is—but you'd be surprised how many P.A.'s don't know the basic facts about this essential function of the purchasing department. An expert gives the when, why, what and how of expediting in this issue.

See page 84.

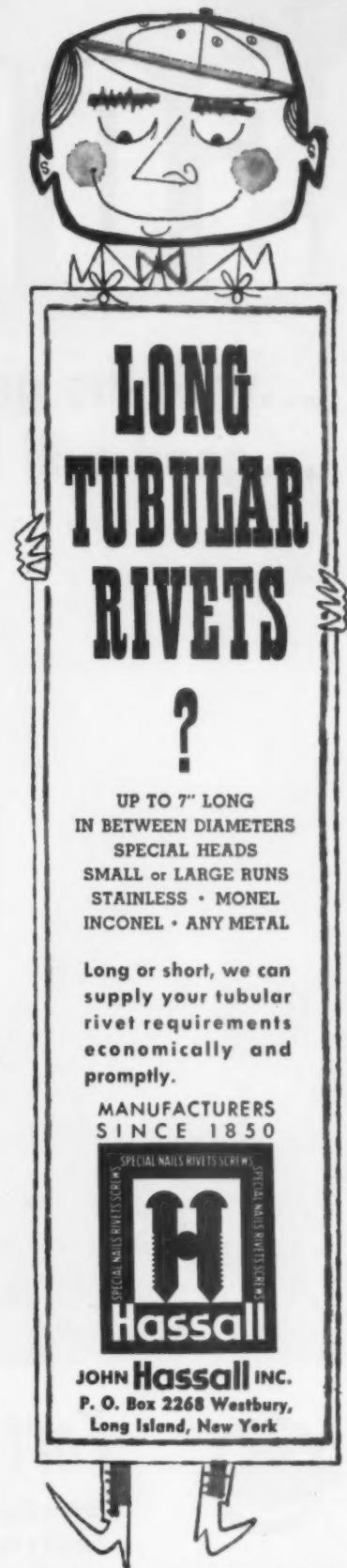
### ✓ Help or Hot Air?

Mercifully, the amount of humbug in advertising is declining. But there probably will always be some that will trap the unwary. One of our legal experts discusses the validity of advertising claims, the courts' distinctions between "puffs" and deliberate misrepresentation, and the legal implications for buyer and seller.

See page 95.

#### Special Notice

Watch for PURCHASING'S annual Value Analysis Issue on June 8 . . . Practical advice from experts on how to use purchasing's most profitable technique . . . Hundreds of cost-saving case histories.



A cartoon illustration of a man with a large head and a small body. He is wearing a cap and a bow tie. He is holding a large rectangular sign with the text "LONG TUBULAR RIVETS" and a question mark. Below the sign, there is more text: "UP TO 7" LONG IN BETWEEN DIAMETERS SPECIAL HEADS SMALL or LARGE RUNS STAINLESS • MONEL INCONEL • ANY METAL". To the right of this, another text block reads: "Long or short, we can supply your tubular rivet requirements economically and promptly." At the bottom, it says "MANUFACTURERS SINCE 1850". The Hassall logo, a stylized 'H' with a serrated edge, is prominently displayed on the sign. The sign also includes the text "SPECIAL NAILS RIVETS SCREWS" on both sides of the 'H'.

JOHN Hassall INC.  
P. O. Box 2268 Westbury,  
Long Island, New York

For More Information Write No. 200  
on Inquiry Card—Page 32

# SOFT

...with the gentleness of fine home tissue  
...good-will builder in the washroom



© Fort Howard Paper Company



## Fort Howard Paper Company

Green Bay, Wisconsin

America's most complete line of paper towels, tissues and napkins



## The Silent Servant

**I**N RESPECT to advertising, it was a worldly, skeptical board of judges. I was privileged to serve on it, along with marketing and advertising executives of some of our top companies. We had been asked to pick winners in the annual "Best Seller" competition of the National Industrial Advertisers Association. Prizes were awarded to those industrial advertisers whose programs best showed "the effectiveness of advertising as an integral and essential part of successful marketing."

The experience was a liberal education for all of us. A thorough, all-day study of almost 70 programs and their documented results gave us new insight into the problems of industrial advertising and new respect for its accomplishments. These are some of the lessons we re-learned:

Modern industrial advertising, for the most part, is carefully, studiously prepared, and skillfully and intelligently presented. Competition is forcing the advertiser to replace colorful but flimsy claims with facts.

There is an enormous amount of helpful information in this type of advertising. Exhibit after exhibit in the N.I.A.A. competition contained letters from engineering, production and purchasing people revealing that they had first learned of important new developments by reading ads in business magazines.

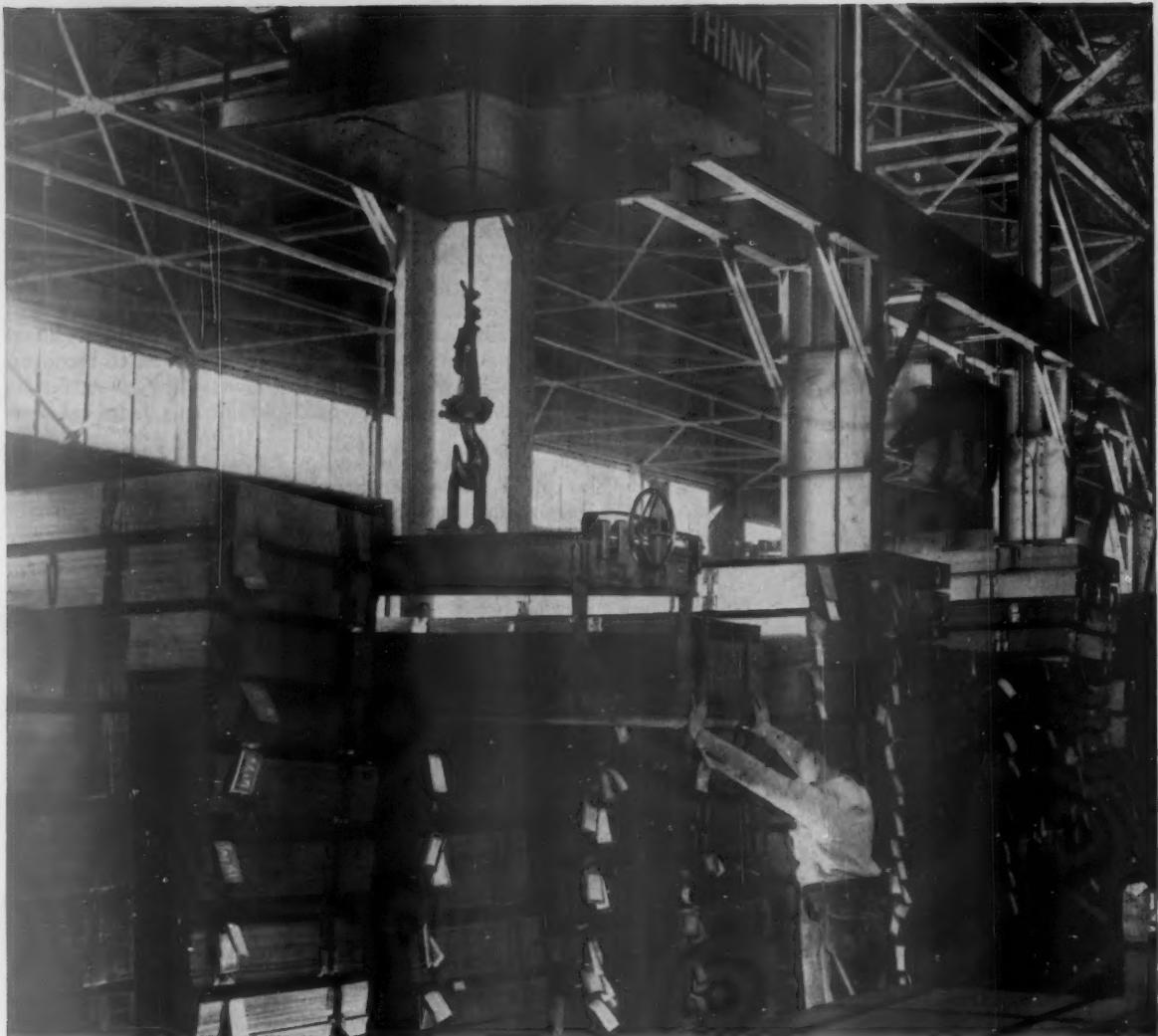
No company can exist very long without some form of advertising. Engineering may design a superior product, purchasing may procure the best materials at the best price to go into it, and the sales force may get it into the market. But they all might as well close up shop and look for work elsewhere if their efforts aren't backed up with well-planned, consistent advertising programs. They get results.

The chronic complainers about "too much advertising" or the "high cost of advertising" are out of touch with reality. Our industrial society is too large and too complex to function effectively without it.

Advertising spurs competition among suppliers by bringing you new ideas, new help. It improves your company's competitive position. A purchasing agent couldn't ask for more.



Purchasing Magazine  
May 11, 1959



## Sheet and strip—more than 20 kinds—and Ryerson delivers fast!

You name it—Ryerson has it.

Hot and cold rolled sheets. Pickled and oiled sheets. Tight-coated galvanized and galvannealed sheets that won't flake or peel when you form them. Stainless sheets. Ryex expanded metal. Perforated sheets. And many others, all in a wide range of gauges and pattern sizes.

Need special sizes? Modern equipment cuts them

to your specifications quickly and economically, in blanks, straight lengths or coils.

Ryerson also offers a complete line of metalworking machinery and tools to meet virtually every requirement.

When you want sheet and strip, give Ryerson a call—it pays!

**I·V·B·M**

Increased Value in Buying Metals  
Ask about this Ryerson Plan for 1959

*Principal Products: Carbon, alloy and stainless steel—bars, structural, plates, sheets, tubing—aluminum, industrial plastics, metalworking machinery, etc.*

PLANTS AT: NEW YORK • BOSTON • WALLINGFORD • PHILADELPHIA • CHARLOTTE • CINCINNATI • CLEVELAND • DETROIT • PITTSBURGH  
BUFFALO • INDIANAPOLIS • CHICAGO • MILWAUKEE • ST. LOUIS • DALLAS • HOUSTON • LOS ANGELES • SAN FRANCISCO • SPOKANE • SEATTLE

For More Information Write No. 202 on Inquiry Card—Page 32

PURCHASING



LESS THAN twenty years ago the purchasing department of Dow Chemical Company's Texas Division was made up of two men and a girl. Its office was in a new magnesium plant just completed on what had been grazing land outside Freeport, Texas.

Seven years ago the department had grown to about 45 people. Today it has over 70. It is housed in a strikingly beautiful administration center that stands on the site of a World War II trailer camp for Dow contractor employees. It buys over \$120 million worth of supplies and services for one of Dow's largest manufacturing installations—a division that has expanded tremendously into production of more than 40 basic chemical products.

The nature of the purchasing department has changed along with its size. Originally, the head of the department at Freeport was designated purchasing agent and reported directly to Dow's Texas Division management. Close liaison was maintained with corporate headquarters in Midland, Mich. Rapid growth generally brings growing pains, and the division was no different from others in its position. Purchasing organization had not kept up with expansion. As late as 1951 none of the major raw materials were negotiated by purchasing. None of the equipment needed for new construction was negotiated by purchasing. Some critical operating supplies were being bought outside purchasing.

In 1952 a major move was made to strengthen and broaden the scope of purchasing. A director of purchases was appointed, with full authority in all areas involving purchases of materials, supplies and services. The new director of purchases, Robert W. Loomis, was also responsible to Texas Division management with status equal to the purchasing group at Midland.



Texas Division purchasing staff meeting begins in conference room.

## Purchasing At Dow Chemical's Texas Division

*How strong, aggressive leadership and imaginative methods helped a purchasing department meet the challenge of booming growth*

Loomis' present organization is made up of four sections. The Project Procurement and Labor Services Section, headed by J. V. Stark, handles the procurement coordination on major maintenance and new construction projects, including labor. The Equipment and Supplies Section, headed by J. R. Lane, buys electrical and mechanical equipment, instrumentation, fabricated process equipment, pipe and structural

steel, and all operating and maintenance supplies. The Raw Materials and Containers Section is under Loomis' general supervision. In this section C. E. Cox is in charge of organic and petrochemical raw materials, D. F. Beard of fuel gas, and C. W. Arnold of inorganic materials and containers. The Purchasing Department Office Management and Expediting Group is headed by R. H. Brewer.

Assisting Loomis are two staff members, C. S. Frink, consultant in charge of special projects (departmental training is one), and W. H. Hillyer, staff assistant working on purchase analysis.

The Texas Division purchasing department maintains close liaison with the home office purchasing staff group in Midland. There is a frequent exchange of information and ideas among all Dow divisions

which is coordinated at Midland by the staff purchase analysis section. Typical of the cooperative projects undertaken is a current study on consolidating purchases of certain items on a company-wide basis—e.g. various items of work clothing. Such studies have revealed instances where different divisions have paid different prices to the same supplier for the same item.

To the outside observer, the most striking thing about the Texas Division's purchasing department is its vitality. It's highly competent, strong, and intelligently aggressive. There's an air of confidence about the people in it—confidence in themselves and in the function. Why it exists and how it has paid off in better buying for Dow is discussed in the articles that follow.

## When an Engineer Takes Over Purchasing

**DIRECTOR OF PURCHASES** Bob Loomis is a convert to purchasing. And like a lot of converts he's as zealous about his new beliefs as he was about his previous doubts.

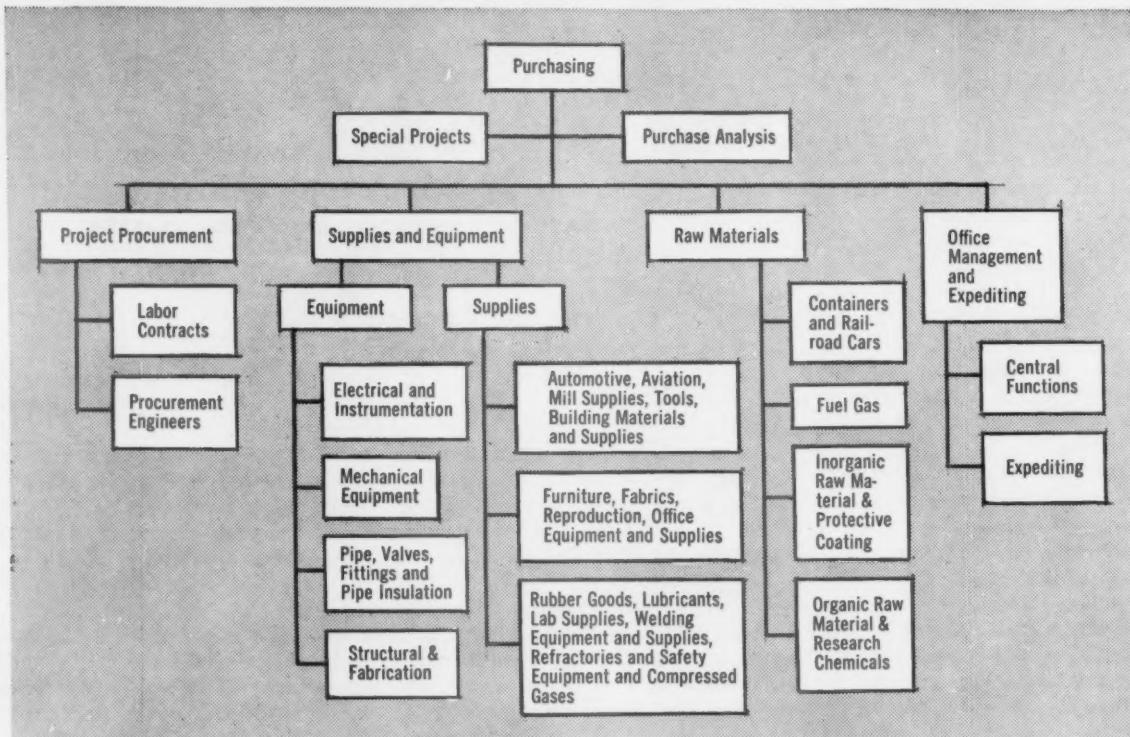
When Assistant General Manager Jack Stein offered Loomis the job in 1952, the first answer he got was no. Loomis had traveled far in the Texas Division since getting his B.S. degree in chemical engineering from Texas A & M in 1940. He had been superintendent of production control for

three years, consultant on special assignments evaluating capital expenditures for new plants, and secretary of the Texas Division Operating Board. (He is now a member of that board). When the Korean War broke out and Dow began a huge capital construction program, he was made manager of priorities and allocations. Loomis admits frankly that throughout all that experience he had rather a dim view of purchasing. "I hadn't really been

greatly exposed to it," he says, "but still I didn't care for it. I didn't want to go into purchasing."

Two things changed his mind. Management convinced him that they recognized the value of good purchasing and wanted a strong department. And they acceded to Loomis' terms—that he would be given a free hand in areas that rightfully should be under purchasing's jurisdiction.

Loomis, once convinced, at-



Organization of the Texas Division purchasing department.

tacked the job with the vigor and frankness that are written all over him. "I had been given the go-ahead signal," he says, "and I was determined to do just that. I did some things too fast, made some mistakes, created some fears and antagonisms. But all the time I never stopped learning. I learned that purchasing involves some complex personal relationships, that you've got to keep the pressure up if you want to do a job, but you also have to know when to back off."

If increasing purchasing's authority required a lot of effort on the outside, it also called for major changes within the department. Three principles have guided Loomis in building his department: you never can be sure you have the right organization until you've literally taken it apart, experimented with it and built it up again; you have to know exactly what you are looking for in a buyer and try to pick people with common characteristics, qualifications and background; you must maintain the enthusiasm of your people by making the job attractive financially and otherwise, and by keeping them convinced that purchasing is an interesting and important function.

**Educational Requirements for Buyers:** Every major branch of engineering is respected in the department, and Loomis is looking for even more technically trained people. A college degree is his absolute minimum requirement and he prefers those with specialized training—chemists or chemical engineers in raw materials, EE's for the electrical section, ME's in the mechanical section, etc. The requirement isn't absolute, however. A chemical engineer may be the ideal man for buyer of fabricated vessels, for example, but an otherwise qualified metallurgical engineer would be acceptable.

"We're not looking for the really dedicated engineers, though," declares Loomis. "We want people with technical training who have only an average interest in engineering and who would feel challenged by purchasing. We're looking for people with broad gen-



Director of Purchases Loomis: "You've got to keep the pressure up if you want to do a job, but you also have to know when to back off."

eral interests who can get along well with other people. It's interesting to note that the engineers who come to us after being around a little bit admit they used to shun purchasing because they thought it wouldn't use their technical knowledge and training."

**Raising the Level of Purchasing.** The battle to get the right people into purchasing and keep them there had to be fought on two fronts. First Loomis had to persuade management to raise the general salary level of the department, which he had considered inadequate. The rapid growth of his group was an advantage here. No precedents on function and responsibility had been firmly established so that he could estimate what a man was worth and put him in a new bracket.

Once salary levels had been equalized with the engineering and operating departments, the second part of Loomis' effort was relatively easy. Qualified people were convinced that they would have as much opportunity in pur-

chasing as anywhere else in the company. They would be in a department that had stature and authority. They would work for a boss who by word and action had blasted any notions that purchasing was a dead end, or a dull place to work.

**Experimenting With Organization.** As he brought new blood in from outside and inside Dow, Loomis began shaking up the structure of the department. He put new emphasis on project procurement and on equipment buying. A brand new section was established to handle procedures, paperwork and expediting, in an attempt to cut down on clerical work and encourage creativity. Buying assignments were shifted, titles changed and responsibilities switched and the reasons for the changes were made bluntly clear.

The career of Ben W. Smith in the department offers a rather neat case history of the application of these three ideas. Smith had been a plant superintendent who became available during a



## Purchasing in Style

Dow's Texas Division has one of the most attractive and best laid out purchasing facilities in the country. These photos taken during a normal working day show the purchasing department's own reception room (upper left); main hall off which buyers' private offices are located (above); Mr. Loomis' office, with Secretary Norma Scott waiting for a signature; the department's central files; and the clerks area in the equipment buying section.



cutback in the 1954 recession. Loomis knew him and brought him in as a staff man. He put him to work streamlining procedures and internal operations.

After Smith had directed the simplification of Dow's filing and paperwork and speeded up the flow of information within and

without the department he was named purchasing agent for supplies and equipment. Then Loomis "lost" him. A new division was being set up in Louisiana, and management wanted a strong purchasing group for it. Loomis agreed to send Smith—along with four other good men, including a

chemical engineer who had just come into purchasing from research, an assistant purchasing agent, an assistant office manager in charge of expediting, and a project engineer. Living up to his own precepts, Loomis wouldn't stand in the way when his people had a chance to move ahead.

## Dow Wants Suppliers That 'Act Like Buyers'

**THERE'S NOTHING** really sensational new about blanket orders. Dow's Texas Division has used them in one form or another for a number of years. And they've experienced the usual internal results: less paperwork, more time for analytical buying. (See box)

What's unusual about Dow's blanket order program is how the supplier's role is interpreted and how frankly it's explained to him. Dow carries 18,000 central stock items and a heavy percentage of them are bought from the many distributors serving the Gulf Coast area. One of the major goals of the blanket order program is simply this: to order many of these items less frequently by depending more upon distributors' stocks. To achieve it, Dow has developed what it calls a "vendor stocking plan."

Dow uses blanket orders only on those items normally stocked in the area. An order, on the average, will cover six months' requirements. Whether a vendor stocking arrangement is necessary or not on a given item is determined by purchasing and the stock department on the basis of the value and anticipated usage of the item, available storage space, etc. Normal lead times on commodities are figured into Dow's minimum stock levels. Under the stocking plan, the vendor is expected to maintain this minimum stock in his warehouse for Dow's exclusive use. Meanwhile, Dow issues releases against the blanket order for its normal requirements. (The order not only shows how much Dow will buy in a given period, but also indicates how much of the item was used in the previous six months

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PAGE 1 OF 3		SOURCER TO: _____			
SUPPLIER DATA		CENTRAL FILE			
DATE _____		FILED BY _____			
1. NAME OF COMPANY _____					
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3. TYPE ORGANIZATION: CORPORATION INDIVIDUALLY OWNED _____					
4. NET WORTH OR VALUE OF CAPITAL _____					
5. OWNERS OR OFFICERS _____					
6. BRANCHES _____					
7. SUBSIDIARIES OR PRINCIPALS _____					
8. PRINCIPAL LINES OF BUSINESS _____					
9. HISTORY _____					
10. BUSINESS HISTORY WITH DOW _____					
11. FACILITIES _____					
M. BUYER'S APPRAISAL					
KEEPS PROMISE		ALWAYS	USUALLY	SELDOM	NEVER
MAINTAINS GOOD RECORD					
DELIVERS PER ROUTINE INSTRUCTIONS					
RETURNS PHONE CALLS					
DELIVERS AT AGREED PRICE (WITHOUT CONTINUAL COMPLAINT)					
SUBMITS QUOTATIONS PROMPTLY					
SOLVES OWN PROBLEMS					
HELPS IN EMERGENCIES					
SUPPLIES ANSWERS READILY					
SHIPS ORDERED QUANTITIES ACCURATELY. IF BAD, INDICATE OVER OR UNDER SHIPMENT.					
INVOICES CORRECTLY					
_____					
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Three-page data record is kept on all major suppliers. Buyer's appraisal of vendor is reviewed and updated periodically.

or a year.) There is no risk to the distributor. If the order is cancelled or not renewed, Dow accepts shipment of all outstanding releases and all material held in reserve stock.

At first, Dow's blanket order system wasn't universally understood or acclaimed by suppliers. A certain amount of unhappiness developed — particularly among those distributors who weren't getting blanket orders. Loomis decided to make things clear.

First he called in those who complained of loss of business and explained the facts of purchasing life to them. He explained what the blanket order was and what Dow wanted to get out of it. "If you're not getting the business," he said, "it's because you're not giving the right kind of service. Ten to fifteen years ago you were good suppliers and we took care of you. But Dow has grown and you haven't," he added, "so you're losing out. The suppliers who are getting the business are those who have grown with Dow—the ones who have expanded warehouse space, added more lines, increased their service."

"We're delegating some of our procurement problems to you" he told the distributors. "The blanket order makes you an extension of our buying arm. We want you to go back to the manufacturers and tell them you represent us, that you're our authorized buying agent."

## **Everybody Saves With Blanket Orders**

Forty-four steps are required in the internal handling cycle of a regular Dow purchase order. A blanket order takes only 11. In a six months' test Dow kept accurate records on nine commodities which were placed on 11 blanket purchase orders. Items included manila rope, wire rope, galvanized fastenings, wrenches, abrasives, paint brushes and cutting tools. They involved more than 1600 different items. In the 6-month period 328 releases were made covering more than 2700 items valued at about \$120,000. At least 275 purchase orders would have been needed to do what the 328 releases did. At 44 steps each, that would have required more than 12,000 operations. The 328 releases, with 11 steps each, required 3,608, or 75% fewer, operations. Dow thinks it's logical to conclude that suppliers have also benefitted by a reduction in detail and in sales effort, and in more effective use of sales time.

THE MARRIAGE of technical skill with sound purchasing to produce the best buy is a P.A.'s pious dream in many companies. At Dow's Texas Division it's a reality.

Take electrical equipment buying for example. Where the equipment is for a new construction project, purchasing gets into the act early. Procurement engineers, working in the Project Procurement and Labor Services group, are members of a capital project team made up of people from process, engineering, construction,

purchasing and a management staff group. This team is responsible for setting a completion date, keeping costs down consistent with that schedule, and generally handling the problems inherent in any major construction project. The procurement engineer on the team represents purchasing. It's up to him to have the structural steel, process equipment, electrical and mechanical equipment on the job site when the field crews need them.

## Commodity experts in the Equipment and Supply group

actually negotiate for the materials and supplies required. This enables them to consolidate requirements and get the advantage of quantity buying. Conflicts between this group and the procurement engineers are few, but when they do arise they are resolved by Loomis, Stark and Lane.

The electrical equipment buyer and other commodity experts are given total estimated requirements by the Project Procurement section as early as possible. They then start their preliminary

investigations. Information is fed to procurement engineers, who in turn handle formal communications with other members of the team. It's up to the procurement engineers to see that deliveries are coordinated with project requirements, check progress reports with Expediting, confer with equipment buyers on "need date" for bills of materials and specifications, and determine—with the construction department—the actual "need dates" in the field.

"Our project procurement approach has whipped a lot of problems for us" according to J. V. Stark, who heads the group. "We have everything planned in advance and we have people with a personal interest in the project to see that the various plans mesh. The procurement engineer is informed on every phase of the project. With our system, the project proceeds in an orderly way—the foundation first, then on up to the chimney."

Electrical equipment buyers—most of whom are electrical engineers with experience in Dow's engineering departments—go to work on preliminary specifications immediately. They try to get needless cost out of a product. Working with the project engineers, they try to eliminate extra components, extra manufacturing operations, non-standard ratings and dimensions—any special feature that doesn't contribute value. Frequently they call in manufacturers and encourage them to sub-



Director of Purchases Loomis and Project Purchasing Agent on a tour of new construction areas.

mit alternate proposals where they think a change in specs will give Dow a better product.

Quotations and recommendations are requested from approved sources and reviewed with the project engineers. Only then is any consideration given to price. Prices and delivery estimates are tabulated and a supplier selected and the order placed.

Some times, because of the nature of the job, the order is really only a letter of intent and further negotiations or specification changes may be necessary. The buyer will often visit a factory in this case to brief the supplier's engineers on Dow's requirements, and review production schedules and drawings to forestall later problems.

## How to Handle Some Touchy Purchasing Problems

An industrial purchasing department can get itself into some difficult positions that are embarrassing at best and extremely dangerous at worst. Director of Purchases Bob Loomis has some strong ideas about problems of this sort. His approach to them is something of a paradox. He has had to be tough, but tactful. He has had to temper "the law" with a tolerant understanding of the foibles of human nature. Here are some of the approaches to universal purchasing problems he's used:

**Lunches With Visitors:** Dow policy is to encourage "Dutch treat" as far as humanly possible. No business visitor, Loomis' instruction to Texas Division purchasing personnel reads, "should be permitted to pay for the lunch of departmental personnel, either in the company cafeterias, Dow Hotel, or at local restaurants." The injunction against purchasing people picking up the check is a little more elastic. They should not pay for lunches of regular weekly or monthly visitors. But . . . if a buyer or anyone else

in the department feels it's the right thing to do, he can pay for a lunch and submit an expense report for it. (Officially stated: "Where the social amenities of the occasion justify it . . .")

**Christmas Gifts:** The Texas Division flatly and publicly is against Christmas gift giving as a business practice. Each year, all suppliers are formally notified that "Dow has adopted the position that none of its employees should accept business gifts at any time from persons or firms now doing or desiring to do business



Supplier representatives check in with receptionist in the Texas Division's main lobby before going to the purchasing department's reception room.

### Purchasing Manual Committee

Dow's purchasing personnel have little excuse for not knowing or caring what's in the department manual. The manual isn't written or revised in some ivory tower and then imposed on the group, as in some companies. It's kept up-to-date by a manual committee on which the whole department has representation. The committee is made up of a representative from the Purchasing Department Office Management section (who is permanent secretary), and a representative from the Supply, Equipment, Raw Materials and Project Procurement groups. Each man serves on the committee for six months.

Regular meetings are held to develop topics for inclusion or revision to current material. A topic is introduced, discussed briefly, then assigned to a member of the committee. He writes up a suggested insertion, or change. He may circulate this informally before the next meeting of the committee if he wishes. The committee reviews it at its next meeting and tries to bring it close to final form. But before it is OK'd, committee members will take it back to their own groups for study and possible suggestions. At a third committee meeting it gets final approval, is cleared for inclusion in the manual by Director of Purchases Loomis, then is prepared on a lithograph master and distributed to manual holders.

"The things we put in the manual are for everyday use," says Loomis. "We don't try to put in it things that are available elsewhere. Policy, for example, is the thinnest section."

with us." Loomis has gone further than most P.A.'s with similar policies. He has warned suppliers that violation of the rule will endanger the business they get from Dow. He follows a reasonable course in carrying out this part of the policy, and won't hang anybody for an honest mistake. But it's a matter of record that Dow cut off a fairly large supplier for obviously and consistently making light of the gift rule.

**Personal Purchases.** Dow's policy on personal purchases is based on its concept of what a purchasing agent's basic job is: "to use his and suppliers' time, knowledge and effort to the maximum benefit of the company." Buying for Dow employees could restrict him in carrying out that job, it is felt. This quite comprehensive list of what Dow considers possible results from personal purchases just about rules out the practice altogether:

- Loss of business to local merchants;
- Violation of trade customs or



Buyer M. J. Lucy of the Pipe, Valves and Fittings section with Clerk Jeanette Danford.



In conference room at weekly staff meeting: (l. to r.) R. H. Brewer, W. H. Hillyer, and C. E. Cox.

marketing policies of the manufacturer;

- More work for vendors, particularly distributors;
- Disclosure of price information;
- Loss of warranty or guarantee service to employee available only through retail channels;
- Ill will among employees if buying help is available to some but not to others;
- Violation of good ethical business practice.

#### ***A Plan for Purchasing Education***

As you'd expect in a progressive purchasing department, continuing buyer education is an important part of the Texas Division's program. But the system has had to be pretty much custom-made. Freeport is a good haul from any large city and from colleges and universities.

In broad outline, the educational program is organized this way:

A course will run from 12 to 18 months. Separate meetings and schedules are arranged for two groups—those in the upper bracket of responsibility, and those who are dispersed throughout the rest of the department. Subject matter is developed accordingly.

Two hour sessions are held weekly in the department conference room from 7 to 9 in the evening. Since as many as 50-60 people will attend a meeting, they are broken down into four groups. "Students" will have already been given an outline of the scheduled discussions and reading assignments in the textbooks used.

Subjects are discussed first from the theoretical angle, then on the basis of actual Dow practice. The differences are analyzed and Dow's approach is critically appraised. "With four groups going through this process, you may get four answers to specific problems," according to C. S. Frink, who supervises the program. "We take these possible answers, try to consolidate them, and see if we can come up with a conclusion that will help us improve operations. If so, we get to work on it right away."



# Value Buying in "Soft" Markets

*Is the P. A. a genuine materials manager or is he just a clerk whose major skill is the ability to distinguish the difference between prices. The test comes in soft markets when suppliers start cutting prices.*

By Roger E. Bremer

**T**ODAY'S cost-price squeeze has made the purchasing job tougher than ever before and has created new challenges. But it has also increased opportunities for establishing purchasing as a profit-making function in the industrial organization.

One of the most important challenges to the profession is the recent wave of editorial material and publicity which infers that purchasing agents have become price shoppers looking for "clearance sales". These articles would have us believe that buyers are out to take advantage of soft market conditions and select sources strictly on price.

As an example, one recent business publication article says that "by shopping around, a buyer can do as well as list price less 35% depending on the quantity and type . . . he wants." The article refers to products in one of the many industries that are sweating out soft market conditions today.

By implication, the article suggests that purchasing agents are ready to stampede in the direction

of this single consideration . . . lowest price. It also implies that when prices are soft, purchasing men no longer concern themselves with value. If these things were true, the steady rise of purchasing as a profession since World War II would have been wiped out by the first showing of a soft market.

The fact is the modern buyer buys on the basis of values regardless of the state of the market with which he is concerned. He insists that his suppliers conform to these "ten commandments" for value buying in soft markets:

## (1) ENFORCE STRICT QUALITY CONTROL.

Assure yourself that the supplier makes no compromises on quality. Does he have a formal quality control program backed up by job specifications and written standards, practices and procedures. Does he use such techniques as statistical inspection with frequencies programmed to insure emphasis on the important quality aspects rather than diluting inspection effort by poorly

planned checking of unimportant items.

Don't overlook savings through quality level certification programs as a means of cutting down your receiving inspection costs and many intangible penalties. Be sure quality is a living thing with programs for continual improvement.

## (2) INSIST ON DELIVERY PERFORMANCE.

Make certain in soft markets that business taken by new suppliers falls into planned production schedules and undergoes careful backlog analysis and proper programming. Can your supplier now afford effective expediting, followup and coordination of activities with his vendors? Does he maintain good records to know where your order stands at all times. One day's delay in delivery can many times wipe out a year's savings at artificial price levels.

## (3) DEMAND OPTIMUM INVENTORY PERFORMANCE.

Having what you need when you need it without carrying extra high cost inventory is important. Review cost penalties of excessive inventories, return on capital invested, cash-flow requirements, floor space, obsolescence, taxes, freight, insurance etc. These can total much more in aggregate than the soft price advantage.

Work with those suppliers who have the know-how and facilities to help you develop economic order quantities and use modern methods of inventory control; i.e. scientific forecasting of inventory requirements and a balanced program for stock replacement. Establish open-end orders and a delivery schedule for these requirements with a supplier who will plan his production accordingly. You will both benefit from resulting cost savings.

## (4) REQUIRE BALANCED SERVICE PERFORMANCE.

Select the supplier who has flexibility to adjust to changing requirements. Specification changes and last minute requirements are one of your biggest headaches and a slow moving vendor in these

situations is a handicap.

Your supplier can be the best source to keep you informed of latest developments in his industry. If he is a leader you will benefit. If you must spend your time to push him along, you will be neglecting other important areas. When you have questions or problems, a supplier who is resourceful in getting the answers and performing, is worth more to your company than temporary advantages of soft market prices.

#### **(5) INVESTIGATE PRODUCT DEVELOPMENT RECORD.**

Avoid those suppliers who feel that their shelf stock should satisfy your needs. Select those who will work cooperatively with your engineers in designing quality in and costs out on new product applications. This is the best way to beat today's cost-price squeeze.

Work with companies whose organizations are geared to seeking better manufacturing practices through improved designs, more economical machinery, and the use of new metals and materials. Make sure your supplier is not one who has made drastic cut backs in resources to meet distress prices. Rather he should be building for the future through facility modernization planning, employee training programs and constant upgrading of both technical and management personnel.

#### **(6) REVIEW ENGINEERING SERVICE CAPABILITIES.**

Unless your company can afford engineering personnel who are experts in every detail of the business, make certain your supplier can and will provide engineering help on his product line. Will he review your "specs" for best cost and best product application and make recommendations? Will he investigate performance problems in the field and make necessary adjustments and corrections?

#### **(7) DEMAND SOUND ADMINISTRATIVE PERFORMANCE**

Make certain the supplier knows how to service you in every way. Does he help you budget your time? Are his sales calls constructive and helpful or merely social? Does he help reduce the number and frequency of your

purchase orders, communications, and costly paper work throughout your company? Does he handle credit memos, invoices, etc. on a sound business basis? Are his customer service methods up to date, utilizing data processing and other modern business equipment? All of these services reduce your costs.

#### **(8) STUDY SUPPLIER'S TREATMENT OF FRINGE BENEFITS.**

In measuring value in a soft price market, the supplier's practice in handling, shipping, warehousing and distributing his product is of prime importance. Does he have adequate inventories or is he bleeding his stocks to meet price deals? Does he have adequate number of strong industrial distributors as a part of his team along with warehouse stocks strategically located? Can he move these stocks and fill your orders on the most economical basis; does he palletize, package and use other modern material handling methods which help reduce your costs? Does he maintain rough and finished stocks to protect you against work interruptions and periods of extraordinary demand?

#### **(9) ESTABLISH SUPPLIER INTEGRITY AS PRIMARY REQUIREMENT.**

Is he interested just as much in your business during periods of high volume as when business is soft? Are his commitments as inviolate for soft prices as for those with better profits? Can he weather the impact of soft market conditions and come out as a strong, solid supplier for the future? Are his business practices sound—does he deal with all on the same basis or favor a few for expediency?

#### **(10) BASE FINAL DECISION ON VALUE ANALYSIS.**

Does your supplier know what this means and how it works in your company, either on a formally programmed basis or informally in articulating good common sense decisions? Does he use it himself in his operations and can he coordinate it into your program? This wraps up the consideration of all the preceding

#### **Ex-P.A. Now Exec V.P.**



**Roger E. Bremer**

Roger Bremer is one of the few top managers that really understands purchasing. Before joining Ohio Injector Co. as executive vice president, he was vice president in charge of purchasing and product planning for Studebaker-Packard Corporation. Before that he was a purchasing agent and manager of purchase analysis for the Lincoln-Mercury Division of the Ford Motor Co.

commandments along with myriad other factors associated with this increasingly popular purchasing technique. It is the final acid test to soft prices.

#### **Facts of Life**

The true purchasing executive knows that the economic facts of life rule that no supplier can live up to these ten commandments faithfully while engaging in unsound pricing practices. Maintenance of an organization and facilities to provide these important elements of value must be supported by a realistic cost vs. selling price relationship.

Suppliers who are suffering from "soft" market conditions can't continue price competition indefinitely. The smarter ones are beefing up the values they have to offer in the areas of service, delivery and extensive support to your value analysis program. It pays to look carefully beyond the price at the bottom of the bid.

# The Finger of Suspicion

## Points at Purchasing

*The P.A. is in a vulnerable spot when a business scandal breaks. As the man who issues the orders he's looked on by the public as the man who's getting the rake-off. To get rid of this false image we have to get over our head-in-the-sand attitudes.*

By Paul V. Farrell

**T**HREE IS a problem in ethics facing the purchasing profession.

But what is it? That purchasing agents are morally inferior to the rest of the population? That they're more susceptible to sin than baseball players, actors, window cleaners, or Congressmen?

Of course they're not. As a matter of fact, from personal observation of thousands of them I'd say that as a group they're equal in probity and rectitude to any other group in the country.

The problem is this: for better or for worse, business itself is on the spot as far as the general public is concerned. The public is interested in business—what it's doing, what it's planning, and how it's behaving itself. There's basically nothing malicious in this interest. It's part of the price we pay for living in a democratic society in which advancement is largely based on personal ability and initiative rather than on class, caste or family.

Inevitably the beam from this spotlight of public interest falls on the purchasing agent. As the man who issues the order he's immediately branded as the boy

who's getting the rake-off. A flood of Countess Mara ties, Fruits-of-the-Month, and Playboy subscriptions may sweep through engineering, quality control and the front office of a given plant during the Christmas season. But who gets tagged as the freeloader? The production manager? No. The quality control engineer? No. The president? Heavens, no. It's the purchasing agent!

### ***The Plot Thickens***

The situation gets a little more sinister and distasteful as we move from ten and twenty-dollar gifts into the area of big kickbacks and the more sensational activities so skillfully exploited by Mr. Murrow and the Columbia Broadcasting System. No matter how outraged we—who know the facts—are about the exaggerated implications of the scandal mongers, the fact remains that some half-truths are getting across to the public. And the public can't quite bring itself to completely disbelieve them.

The fine distinctions between different types of buyers, between different kinds of businesses, are

blurred in the press and over the air. The only well-defined idea that emerges is that purchasing agents in general are having one hell of a time for themselves.

The situation is serious. Not only for the purchasing agent as an individual, respected member of the community, but for the purchasing agent as a representative of American business. The cornerstone of our entire economic and enterprise system is personal and corporate integrity. If there's a lack of confidence in these, the whole structure is weakened.

It's difficult to pin down statistically but I think it's clear that there has been a general decline in the moral climate of the nation. Perhaps the disruption caused by war is responsible. Nevertheless it is up to the business man not only to keep himself above suspicion but to do everything in his power to improve the moral standards of the whole community.

We have to develop more public confidence in the basic integrity of businessmen in general and purchasing agents in particular. We have to continue and ex-

pand the remarkable work of the National Association of Purchasing Agents and its members in raising the standards of the profession in the past few decades. During my research on the history of N.A.P.A. I was made excitingly aware of what the efforts of dedicated men could do to eliminate most of the questionable practices that had plagued their profession. The question is how to maintain that splendid record and make it clear for the world to see.

#### Face Up to Life's Facts

A basic step, I think, is to face up to the facts of life. No matter what organization you look at—the American Bar Association, the American Medical Association, the F.B.I., your church—you'll find it's made up of the glorious, and foolish, and strong, and weak creatures called people. Purchasing agents are no different—and there are proportionately as many rotten eggs among them as there are in the other groups. The reasonable thing would be to admit it, explain it, and try to keep it to a minimum. But a fairly large group of purchasing people seem to prefer a head-in-the-sand approach.

A rather personal example comes to mind. About September each year we begin to think of doing a feature on "The Christmas Gift Problem." And each year we seriously consider some P.A.'s claims that the topic is a dead horse, that there's nothing more to be said about it, that this sort of thing only casts reflections on purchasing, and that nobody's interested in it anyway. Yet every time we run something on the subject it gets greater attention. Our readership scores go up and demand for tear sheets reaches a new high.

Last year we jumped the gun and did a special issue in September on the whole question of ethics. The immediate reason was a spate of charges from outside the purchasing profession that kickbacks and excessive gift-giving were on the rise.

The issue in which this appeared was tremendously popular. But again we got complaints.

"What you say might be true but why say it" was one theme. "It just isn't true . . . discussions like these are not suitable for your magazine . . . etc., etc.," were others. One local association official publicly questioned the taste, authenticity and by implication the aim of one of the articles in that issue. Actually, we printed it with the same goal in mind as that professed by the official: to help do away with the practice of business gift-giving at Christmas.

#### Where to Now?

Once we've recognized the problem and admitted our responsibilities, where do we start toward a solution?

Despite some rather spectacular attempts it appears that you can't completely change human nature. What little success the race has had in combatting evil is the result rather of trying to give the good side of human nature a chance to flourish and starving the bad side. There are many ways to do this—rewarding virtue and punishing villainy, for example. But for our purposes I think the most effective is to reduce temptation. You don't have

to be a moral theologian to appreciate why the Church has always stressed avoidance of the "occasions of sin." It has an exalted view of man, but it knows his weaknesses and tries to help him help himself by advising him to stay away from the occasions of sin.

Some of the most successful programs for keeping purchasing on a high ethical plane are based on just this principle. And the P.A.'s who turned the trick found these were the ways to do it:

1. Select morally responsible people for your department and pay them well. You can't do one and not the other. It's unfair and dangerous to choose a good man, pinch pennies when you pay him, and then expect him to display heroic sanctity when temptation appears. On the other hand, money doesn't cure everything, despite what some people believe. Certain persons won't be able to resist temptation no matter how much they have. Occasional scandals among well-paid purchasing people prove that. Character comes first and adequate remuneration next.

(Please turn to page 172)



"... I expected you to come back from the convention loaded . . . with purchasing ideas . . ."

### Identification Please!

"So many salesmen call on us, that until they've come back two or three times it isn't easy to associate their names with the proper company, product or salesman's face. Sometimes our lobby gets pretty cluttered up with salesmen, and we find ourselves talking to two or three vaguely familiar faces instead of just the one we stepped into the lobby to meet. Under these conditions we have interviewed salesmen who not only committed the cardinal sin of failing to ask for an order—they even forgot to give their names, companies and products! Maybe they thought they were sitting in the lap of the competition, but if they had identified themselves, they would have known—and we would too."

## Buying 30,000 Items— A few at a Time

By **P. G. Nolte**, Purchasing Agent,  
National Automatic Tool Co., Inc., Richmond, Indiana

THIS YEAR 4000 salesmen will call at the purchasing department of National Automatic Tool Co., Inc., Richmond, Ind., many of them for the first time. A lot of the newcomers will go away shaking their heads. They'll be puzzled that a company of this size, appearance, and D & B rating buys in such small quantities.

But they keep coming back. They learn that orders which come in frequent bits and drib-

bles can build up over the year into plenty of business. And partly it may be a matter of pride. There's a challenge in working with a company where buying is never routine.

To understand why, you have to understand something of the special machine tool business. Natco builds drilling, boring, tapping and facing machines for metalworking plants. Each of these is built to a specific order.

Even the so-called "standard" machines are standard only in major components, and will contain many modifications to suit the customer. Almost everything is one of a kind.

Thus the purchasing function differs radically from that of a maker of off-the-shelf items. It has a lot more in common with purchasing for a research laboratory.

### Blueprint Buying

Sixty per cent of the buying is done directly off blueprints. The buyer not only has to know how to read blueprints; he frequently has to read the engineer's mind as well. Even when purchasing knows that an order has been placed for a standard tool, there's rarely an opportunity to get the jump on the engineering department. Vendors can't even be called in for estimates until the prints come down. The device the engineers thought they would need on Monday may have turned into something entirely different by Wednesday when the drawings begin to take shape.

So, there's seldom enough time. A purchasing department rule



P. G. Nolte, purchasing agent of National Automatic Tool Co., Inc. studies a blueprint. From it he will select the vendors to quote on tooling.

says that no order will be held more than 24 hours. But few are ever held that long, even when it means an across-the-country hunt to find a supplier.

In the ideal situation purchasing gets 30 days procurement lead time. But all too often, buying has to be done for immediate delivery.

Every means—train, bus, plane, truck, mail, company car—is used to get parts into the shop on time. Nobody is trying to be funny when an order gets stamped "Very Rush", or at the height of crisis, "Emergency!" On more than one occasion, schedules have been so tight that key parts have had to be shipped directly to a customer's plant to meet the incomplete machine when it arrives.

#### Across-the-Board Responsibility

The man who places the order is responsible for it from the time it is placed until it arrives in the shop and is in running order. So, in addition to making purchases, buyers have to be expediters, as well as experts in inspection and judgment of parts that have to be rejected or salvaged because of the time element involved. Purchasing gets charged (against its operating budget) for labor and delays resulting from parts that fail to meet the specifications or prove defective.

When things go smoothly it may be good luck, but in purchasing, the lucky people are usually those who know their jobs. The three-men in the purchasing department are fortunate in this respect. They share 81 years of purchasing experience among them.

This wide experience certainly plays an important part in keeping costs down. Actually, each order averages only \$6.50 in overhead (clerical work, handling, postage, phone calls, etc.).

It would be a lot more if the faithful salesmen didn't keep calling. Each salesman is seen by at least one of the three executives in purchasing. The salesman is an important man: An essential factor in Natco's ability to compete in the machine tool business. He does much more than expedite purchases. He brings news of business conditions, of new products and processes, and



R. D. Garrett, buyer, checks a casting dimension. Most of Natco's castings are special, of intricate design and are purchased in quantities of one, two or three.

of additional sources of supply.

He deserves courteous and fair treatment, and if there's no sale, he deserves an explanation of why his product is not suitable. Then, when he leaves, even if he carries an order for only one screw in his briefcase (and it has happened), he becomes another ambassador for the company.

When a purchasing department buys 30,000 items ranging from one or two ounces to 16,000 lbs. apiece, and buys them a few at a time, it pays to take advantage of even the smallest price breaks. A typical order might be upped from five items to six to catch a price break on the half-dozen. Salesmen perform an important service in pointing out savings at all levels.

Although it sounds like a nickel and dime business, the salesmen who have the stamina to keep coming back know there are prof-

its to be made from it. For instance, last year Natco bought \$1 million worth of gray iron castings alone, 70 per cent of them from blueprints, and virtually no two alike. The company also buys the tools that will be used with each machine, so that when it is installed in the customer's plant, it will be ready for work. Ninety per cent of these tools are special and purchased to blueprint.

Probably no student of purchasing would ever recommend a similar system; but it's one of the facts of life in the special machine tool business. The system can be kept from getting out of hand through long buying experience, meticulous attention to detail, a bird-dog nose for scenting out new sources of supply, and a firm conviction that a hard-working salesman is a purchasing agent's best friend.

# Expediting—the Professional Way

*Many P.A.'s regard expediting as a minor offshoot of their buying jobs. But proper expediting can often mean the difference between on-time production and costly shutdowns. Here's a complete analysis by an expert of how, when, and why expediting works.*

By Walter J. Brooking

THE TERM expedite is used frequently—and often used loosely. It implies following something through to completion and hurrying it by special attention.

However, expediting, as it applies to the functions of the purchasing department, should be more clearly defined. The definition should encompass who does the expediting, when it is done, and how it is done.

## A Good Definition

Here is a concise, yet applicable, definition of expediting: a persuasive effort to obtain delivery of goods or services earlier than the supplier's normal delivery date. This definition includes a number of situations which arise in the administration of expediting in a purchasing department. It also excludes, by inference, many other occasions.

These are some typical situations that call for expediting:

- (1) When there is a special reason for hurrying construction of facilities.
- (2) When it is necessary to accelerate deliveries in order to meet an expanding production schedule which is growing faster than had been originally planned.
- (3) When special effort is required to obtain delivery as a result of an unexpected



To hasten the completion of these 40-foot-thick tanks, expediting was required on two fronts—the tanks themselves and the foundations. Vigorous expediting resulted in delivery six months ahead of the originally scheduled date.

change or delay in the supplier's schedule.

- (4) When extra effort is needed because a general supply situation becomes unusually tight.

## Not Routine Follow-Up

The term expediting should not be applied to the routine follow-up of regularly planned production. This requires merely a rather routine clerical approach. Regular routine follow-up of purchase orders can be kept simple if the following conditions—*inherent in a well run purchasing program*—are followed:

- (1) Orders are placed according to well laid plans.
- (2) Vendors are reliable.
- (3) Proper lead time and delivery arrangements are specified.

- (4) Products are satisfactory.

If these conditions are met, only a minimum of routine follow-up should be necessary. Little or none of the nagging and frenzied efforts to insure delivery will be needed.

Real expediting is a selling job. If it is important enough to attempt to persuade a supplier to speed up his services or product, then it is important enough to put a man of maturity, stature, and understanding on the job rather than a clerk.

## Preparations For Expediting

When it becomes evident that an item or service needs to be

Mr. Brooking is assistant director of purchasing of Foote Mineral Company, Philadelphia, Pa. He has written numerous articles on purchasing for PURCHASING MAGAZINE.

expedited, the man who will actually do the work must thoroughly prepare himself before he contacts the supplier. He must know the details and history of the order including the answers to these questions:

- (1) What is the order number, when was the order placed, exactly what items did it cover when was it promised, and who was the salesman or contact in the supplier's organization?
- (2) Were the specifications clear and complete?
- (3) Were there services (such as engineering drawings or specifications) that needed approval before fabrication could start? If so, what is the status of them?
- (4) Are there any special materials involved?
- (5) How is the item or service to be made or performed.
- (6) Does the vendor buy part of the product or is all the processing done by his own organization?
- (7) Where is the supplier's plant? Is it at a different location from the sales office? If engineering is involved, is the engineering done at the fabricating plant or at the sales office?

With this information already collected, the expeditor can ask the supplier questions that have meaning. The solution of the real problem of speeding the delivery may then be approached quickly.

#### **Who to Contact?**

When the expeditor is thoroughly prepared and begins his contact with the supplier, he should start with the salesman who took the order and learn what still has to be done. If it is engineering work, he should diplomatically ask to see the chief engineer. If it is fabrication, he should find out where the work is being done, by whom, and the name of the man to contact. This information is usually easily available, if requested with a forthright explanation of why it is important that the delivery be speeded up.

How the contact is made is dictated by the degree of importance

#### **Preparation Before Expediting**

A good expeditor should be well-prepared with certain basic facts before he goes to work on a particular job. This background information should include:

- (1) The order number, when the order was placed, the items it covers, when it was promised, and name of salesman or contact in the supplier's organization.
- (2) Were the specifications clear and complete?
- (3) Were there services (such as engineering drawings or specifications) that needed approval before fabrication could start? If so, what is their status?
- (4) Are there any special materials involved?
- (5) How is the item to be made or the service performed?
- (6) Does the vendor buy part of the product or is all the processing done by his own organization?
- (7) Where is the supplier's plant? Is it at a different location from the sales office? If engineering is involved, is the engineering done at the fabricating plant or the sales office?

and the distance to the supplier. A telegram carries more of an air of urgency than a letter; a telephone call provides greater personal contact and a better opportunity for salesmanship. If the material is of sufficient importance and geographical limitations allow it, a personal call to the supplier in his office or plant is the most impressive technique and usually the most productive.

The personal call demonstrates your interest and the importance you attach to the goods. It confronts the supplier with *prima facie* evidence of your concern. By calling on him you take your problem out of the realm of the usual hurry up telephone call and give your request an air of urgency. You also get a personal impression of the supplier's attitude, and a more complete picture of the status of the order.

#### **The Expeditor's Attitude**

The attitude shown by the expeditor in his contacts with the supplier is probably the most important single element in the follow-up process. He must approach the vendor with an air of urgency and the hope that the supplier can do something extraordinary. He must, however, also exhibit an attitude of reasonableness about a joint problem requiring

the cooperative effort of both parties.

The experienced expeditor knows that he will defeat his own purpose if he openly criticizes mistakes made by the supplier's organization. If there have been delays, mistakes, or unexpected conditions in the supplier's organization, a conscientious representative will be aware of it without the expeditor's criticism. He probably will work more constructively towards solving the problem if short-comings are not dwelt upon.

Emotional "table pounding" and verbal thumping of a supplier in an expediting situation should be employed only as a last resort. These maneuvers usually antagonize the supplier and serve no useful purpose. Such tactics may be colorful in creating the concept of the hard-hearted expeditor, but in actual practice they are a waste of time and money.

#### **The Starting Point**

The expeditor should start with his contact in the supplier's organization. He should learn the status of the order on that particular day, and forget past mistakes. He should concentrate all his efforts on speeding the shipment until delivery is finally made.

(turn page)



Expediting saved six to eight months in the construction of this mining equipment maintenance shop. A steel supplier's willingness to cooperate after a personal visit by an expeditor was the key factor.

The expeditor should tell the production manager, plant superintendent or chief engineer of the supplier's organization exactly what the problem is. Once he knows that, he will probably be able to give greater assistance in working out a solution.

#### **The Right Man**

If the expeditor can personally meet the man responsible for producing the item, he can usually quickly discover the exact status of the order. He can show his good faith by trying to help the supplier in these ways:

- (1) Offering to help locate materials, to expedite and cooperate (if feasible) in making substitutions.
- (2) Analyzing the supplier's production problem, always with an eye to the possibility of overtime work.

It must always be remembered that the supplier has other customers to whom he has responsibilities. He cannot rush one order if it will put him in a position of jeopardizing his position with other customers.

#### **Discussing the Details**

During this discussion of the details of the order the expeditor checks these points:

- (1) Is some of the work sub-contracted?
- (2) Is some particular machine or facility the potential bottleneck?
- (3) What is the present schedule and how might it be re-ar-

ranged?

After this initial contact and survey, the expeditor should not camp on the supplier's doorstep. If the supplier is responsible he will welcome your suggestions, but will want to handle his own work.

The expeditor should convince the supplier of his willingness to come at any time to help out. Usually, however, the follow-up can be handled by telephone.

#### **Prompt Processing**

Expediting should begin as soon as there is evidence that the supplier's delivery date must be bettered. Sometimes this happens even before the order is placed. Often it is desirable to attempt to accelerate the delivery or to pay particular attention that the accelerated delivery promise is met. Attention should be given early to expediting in order to insure prompt processing of the order through the supplier's sales office, engineering office, and production facilities.

The feeling of urgency should start when the order is placed. Often a telegraphed order number and brief description, followed by a confirming order, is the fastest way to get it through the sales organization of the supplier.

#### **Expediting Shipments**

Expediting should continue while the product is processed through the supplier's plant. Careful study should be given to shipping arrangements. There is little

satisfaction in expediting an item to the hilt, having it ready to ship on Friday, and letting it remain in the plant over the weekend while waiting for dispatch by some transportation agency. There is even less satisfaction in hurrying it and having the unit put into a mixed carload of items, thereby having it take several days longer to arrive than would be the case with a more rapid type of transportation.

When expediting is justified, the difference in receiving the item several days ahead of time frequently far outweighs the extra cost of shipping by a faster method of transportation. All of these methods should be explored carefully before the item is ready to be shipped. Once it is shipped, the supplier should be instructed to wire the carrier's waybill, name, truck or car number, and other pertinent data so that the movement of the carrier can be expedited.

Meticulous care should be taken to quickly expedite all matters within the buyer's organization. Nothing causes a supplier's interest to fade faster than unreasonable slowness by the purchasing department in approving prints, supplying engineering data, or responding to important questions.

#### **Case History**

Here's an example of the effectiveness of this approach to an expediting job: a large piece of processing machinery was purchased for an expansion of production facilities at an Eastern plant. The supplier, whose factory is located in Utah, promised delivery in 18 months. Shortly after placing the order, it became evident that if the expansion could be completed within a year, the six months of additional production would have a economic return high enough to justify the expediting efforts.

The expeditor prepared himself on the subject and arranged appointment with the president of the supplier's organization at the supplier's plant in Utah. The expeditor stressed the urgency of the situation explaining that he

(Please turn to page 172)

# A Simple Way to Control Blanket Order Paperwork

*One of the problems with any blanket order program is maintaining control without creating excessive paperwork. Here's the way one purchasing department cut paperwork 50% by using blanket orders and yet purchasing has more control than ever. It's a simple low-cost system that can be used by almost any purchasing department.*

By H. P. Waldron and F. J. Tompkins

**Editor's Note:** There's nothing new about blanket orders—which is what this article is about. What makes this story of interest is that it describes in detail how a General Electric plant efficiently handles the paperwork in its blanket order program. For the P.A. who may be somewhat less than satisfied with his current method of handling blanket orders, there are some valuable tips. And for the purchasing executive who doesn't use blanket orders but is thinking about it, the article describes how G.E. started its program and how its paying off.

AFTER A thoughtful look at our purchasing operation, it was clear to us that there just was too much paperwork. It was taking too much time, costing too much money. A thorough analysis of the purchasing cycle showed that the best way for us to streamline our operation was to buy on a blanket-order basis.

As a result of this switch, we,

(Capacitor Department, General Electric Co., Hudson Falls, N.Y.) have reduced paperwork 50%. Control, accuracy and efficiency have all been improved.

Before we adopted blanket orders for both production and non-production items, all orders required six separate steps. This was true even with repetitive items. Basically, here's the way our routine purchases were handled.

(1) In the production office, variable information such as quantity and date required and con-

stant information were recorded on a travel order card.

(2) A copy of the travel order card was sent to purchasing.

(3) Purchasing rewrote the information on a purchase order.

(4) Two copies of the purchase order were forwarded to the vendor, who retained one copy, and returned the other to General Electric as an acknowledgement.

(5) One copy of the order was sent to production for its records.

(6) Four copies of the order were sent to receiving.

When the material arrived, the receiving clerk used one copy as a transportation ticket to move the material through inspection and into stock. The second copy was sent to production as an "arrival notice"; the third was sent to accounts payable, and the fourth to purchasing to close out the order.

Each of these steps was performed by a different person in a different place.

## Switch to Blanket Order

By switching from this cumber-

Both Mr. Waldron and Mr. Tompkins are with the General Electric Company's Capacitor Department, Hudson Falls, N.Y. Mr. Waldron is purchasing agent while Mr. Tompkins is product control analyst.

Fig. I. This pre-printed form helps keep shipping release paperwork to a minimum.

Fig. II. Vendors' packing slips are specially designed to permit them to be used as receiving reports.

some system to blanket orders, we streamlined our paperwork drastically. There was very little cost involved in making the change and it's the kind of system that will fit any purchasing operation. Here's how it works.

First, vendors are requested to quote on specific repetitive items. Vendor selection is made on the basis of competitive quotes, quality, service and reliability.

Conditions and terms are worked out to the mutual satisfaction of both vendor and purchaser. A contract (purchase order) is issued listing the agreements, specification, price, etc. After the acknowledgment is received from the vendor, the blanket order goes into effect. The right source, right quality and right price are established. All that remains is to get the right quantity at the right time.

Requests for purchase are received in purchasing from the various production sections on travel order cards. These cards have repetitive information already filled in to save time for the production clerk. The buyer reviews the requirements, and releases the order to the selected vendor in one of two ways:

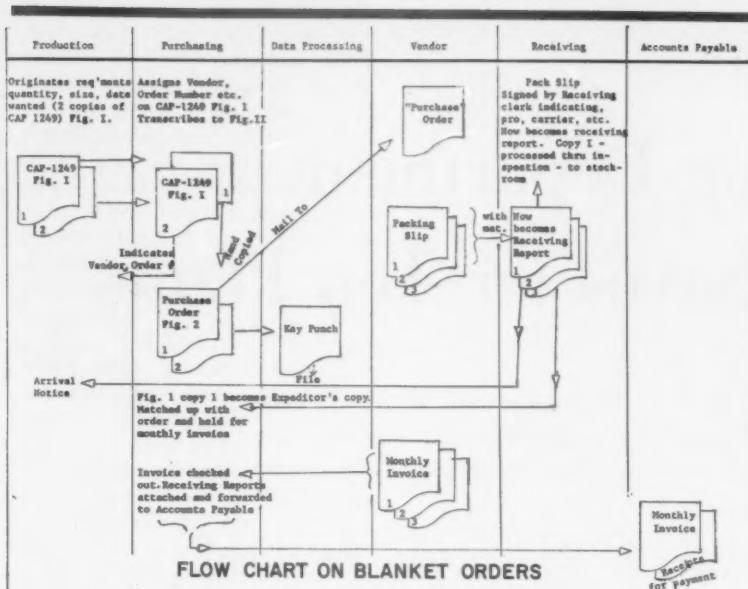
(1) The release may be sent by TWX teletype directly to the vendor. The single TWX copy becomes purchasing's record.

(2) Or the release may be mailed to the vendor on prepared forms (See Fig. I). This form has all constant information pre-printed on it. Only the variable information (quantity and delivery requirements) is added. No other paperwork is required.

Ship to:		GENERAL ELECTRIC COMPANY			
Alley Structures		Rudson Falls, New York			
P.O. Box 1702		P.O. - Rudson Falls			
Albany, New York					
Purchase the following aluminum PL 2 MC 27 as to be used in the electrical industry.					
Item	Identification Number	Quantity Ordered	Item	Identification Number	Quantity Ordered
1		16	17		
2		18	19		
3		20	21		
4		22	23		
5		24	25		
6		26	27		
7		28	29		
8		30			
IMPORTANT: TAG EQUIPMENT TO THIS NUMBER _____					
1. If for any reason you are unable to ship for delivery on the dates specified, advise Mr. Walter Barbour at Rudson Falls, N.Y. 4-2341-Ext. 339 <u>AS SOON AS POSSIBLE</u> .					
2. Three (3) copies of your packing slip serially numbered must accompany material shipped.					
3. Our complete identification number must appear on all packing slips and invoices.					
4. Your statement detailed by deliveries showing the date, amount, price and extension with the original number of the packing slip, are to be rendered once monthly.					
5. Checked (✓) items confirming phone _____ Do Not Duplicate.					
Production approval _____ Date _____ L. L. Barber, Buyer by _____ Date _____					

Part	924137-23	924137-24	924137-25	924137-26	924137-27	924137-28	924137-29	924137-30	924137-31	924137-32	924137-33	924137-34	924137-35	924137-36	924137-37	924137-38	924137-39	924137-40	924137-41	924137-42	924137-43	924137-44	924137-45	924137-46	924137-47	924137-48	924137-49	924137-50	924137-51	924137-52	924137-53	924137-54	924137-55	924137-56	924137-57	924137-58	924137-59	924137-60	924137-61	924137-62	924137-63	924137-64	924137-65	924137-66	924137-67	924137-68	924137-69	924137-70	924137-71	924137-72	924137-73	924137-74	924137-75	924137-76	924137-77	924137-78	924137-79	924137-80	924137-81	924137-82	924137-83	924137-84	924137-85	924137-86	924137-87	924137-88	924137-89	924137-90	924137-91	924137-92	924137-93	924137-94	924137-95	924137-96	924137-97	924137-98	924137-99	924137-100	924137-101	924137-102	924137-103	924137-104	924137-105	924137-106	924137-107	924137-108	924137-109	924137-110	924137-111	924137-112	924137-113	924137-114	924137-115	924137-116	924137-117	924137-118	924137-119	924137-120	924137-121	924137-122	924137-123	924137-124	924137-125	924137-126	924137-127	924137-128	924137-129	924137-130	924137-131	924137-132	924137-133	924137-134	924137-135	924137-136	924137-137	924137-138	924137-139	924137-140	924137-141	924137-142	924137-143	924137-144	924137-145	924137-146	924137-147	924137-148	924137-149	924137-150	924137-151	924137-152	924137-153	924137-154	924137-155	924137-156	924137-157	924137-158	924137-159	924137-160	924137-161	924137-162	924137-163	924137-164	924137-165	924137-166	924137-167	924137-168	924137-169	924137-170	924137-171	924137-172	924137-173	924137-174	924137-175	924137-176	924137-177	924137-178	924137-179	924137-180	924137-181	924137-182	924137-183	924137-184	924137-185	924137-186	924137-187	924137-188	924137-189	924137-190	924137-191	924137-192	924137-193	924137-194	924137-195	924137-196	924137-197	924137-198	924137-199	924137-200	924137-201	924137-202	924137-203	924137-204	924137-205	924137-206	924137-207	924137-208	924137-209	924137-210	924137-211	924137-212	924137-213	924137-214	924137-215	924137-216	924137-217	924137-218	924137-219	924137-220	924137-221	924137-222	924137-223	924137-224	924137-225	924137-226	924137-227	924137-228	924137-229	924137-230	924137-231	924137-232	924137-233	924137-234	924137-235	924137-236	924137-237	924137-238	924137-239	924137-240	924137-241	924137-242	924137-243	924137-244	924137-245	924137-246	924137-247	924137-248	924137-249	924137-250	924137-251	924137-252	924137-253	924137-254	924137-255	924137-256	924137-257	924137-258	924137-259	924137-260	924137-261	924137-262	924137-263	924137-264	924137-265	924137-266	924137-267	924137-268	924137-269	924137-270	924137-271	924137-272	924137-273	924137-274	924137-275	924137-276	924137-277	924137-278	924137-279	924137-280	924137-281	924137-282	924137-283	924137-284	924137-285	924137-286	924137-287	924137-288	924137-289	924137-290	924137-291	924137-292	924137-293	924137-294	924137-295	924137-296	924137-297	924137-298	924137-299	924137-300	924137-301	924137-302	924137-303	924137-304	924137-305	924137-306	924137-307	924137-308	924137-309	924137-310	924137-311	924137-312	924137-313	924137-314	924137-315	924137-316	924137-317	924137-318	924137-319	924137-320	924137-321	924137-322	924137-323	924137-324	924137-325	924137-326	924137-327	924137-328	924137-329	924137-330	924137-331	924137-332	924137-333	924137-334	924137-335	924137-336	924137-337	924137-338	924137-339	924137-340	924137-341	924137-342	924137-343	924137-344	924137-345	924137-346	924137-347	924137-348	924137-349	924137-350	924137-351	924137-352	924137-353	924137-354	924137-355	924137-356	924137-357	924137-358	924137-359	924137-360	924137-361	924137-362	924137-363	924137-364	924137-365	924137-366	924137-367	924137-368	924137-369	924137-370	924137-371	924137-372	924137-373	924137-374	924137-375	924137-376	924137-377	924137-378	924137-379	924137-380	924137-381	924137-382	924137-383	924137-384	924137-385	924137-386	924137-387	924137-388	924137-389	924137-390	924137-391	924137-392	924137-393	924137-394	924137-395	924137-396	924137-397	924137-398	924137-399	924137-400	924137-401	924137-402	924137-403	924137-404	924137-405	924137-406	924137-407	924137-408	924137-409	924137-410	924137-411	924137-412	924137-413	924137-414	924137-415	924137-416	924137-417	924137-418	924137-419	924137-420	924137-421	924137-422	924137-423	924137-424	924137-425	924137-426	924137-427	924137-428	924137-429	924137-430	924137-431	924137-432	924137-433	924137-434	924137-435	924137-436	924137-437	924137-438	924137-439	924137-440	924137-441	924137-442	924137-443	924137-444	924137-445	924137-446	924137-447	924137-448	924137-449	924137-450	924137-451	924137-452	924137-453	924137-454	924137-455	924137-456	924137-457	924137-458	924137-459	924137-460	924137-461	924137-462	924137-463	924137-464	924137-465	924137-466	924137-467	924137-468	924137-469	924137-470	924137-471	924137-472	924137-473	924137-474	924137-475	924137-476	924137-477	924137-478	924137-479	924137-480	924137-481	924137-482	924137-483	924137-484	924137-485	924137-486	924137-487	924137-488	924137-489	924137-490	924137-491	924137-492	924137-493	924137-494	924137-495	924137-496	924137-497	924137-498	924137-499	924137-500	924137-501	924137-502	924137-503	924137-504	924137-505	924137-506	924137-507	924137-508	924137-509	924137-510	924137-511	924137-512	924137-513	924137-514	924137-515	924137-516	924137-517	924137-518	924137-519	924137-520	924137-521	924137-522	924137-523	924137-524	924137-525	924137-526	924137-527	924137-528	924137-529	924137-530	924137-531	924137-532	924137-533	924137-534	924137-535	924137-536	924137-537	924137-538	924137-539	924137-540	924137-541	924137-542	924137-543	924137-544	924137-545	924137-546	924137-547	924137-548	924137-549	924137-550	924137-551	924137-552	924137-553	924137-554	924137-555	924137-556	924137-557	924137-558	924137-559	924137-560	924137-561	924137-562	924137-563	924137-564	924137-565	924137-566	924137-567	924137-568	924137-569	924137-570	924137-571	924137-572	924137-573	924137-574	924137-575	924137-576	924137-577	924137-578	924137-579	924137-580	924137-581	924137-582	924137-583	924137-584	924137-585	924137-586	924137-587	924137-588	924137-589	924137-590	924137-591	924137-592	924137-593	924137-594	924137-595	924137-596	924137-597	924137-598	924137-599	924137-600	924137-601	924137-602	924137-603	924137-604	924137-605	924137-606	924137-607	924137-608	924137-609	924137-610	924137-611	924137-612	924137-613	924137-614	924137-615	924137-616	924137-617	924137-618	924137-619	924137-620	924137-621	924137-622	924137-623	924137-624	924137-625	924137-626	924137-627	924137-628	924137-629	924137-630	924137-631	924137-632	924137-633	924137-634	924137-635	924137-636	924137-637	924137-638	924137-639	924137-640	924137-641	924137-642	924137-643	924137-644	924137-645	924137-646	924137-647	924137-648	924137-649	924137-650	924137-651	924137-652	924137-653	924137-654	924137-655	924137-656	924137-657	924137-658	924137-659	924137-660	924137-661	924137-662	924137-663	924137-664	924137-665	924137-666	924137-667	924137-668	924137-669	924137-670	924137-671	924137-672	924137-673	924137-674	924137-675	924137-676	924137-677	924137-678	924137-679	924137-680	924137-681	924137-682	924137-683	924137-684	924137-685	924137-686	924137-687	924137-688	924137-689	924137-690	924137-691	924137-692	924137-693	924137-694	924137-695	924137-696	924137-697	924137-698	924137-699	924137-700	924137-701	924137-702	924137-703	924137-704	924137-705	924137-706	924137-707	924137-708	924137-709	924137-710	924137-711	924137-712	924137-713	924137-714	924137-715	924137-716	924137-717	924137-718	924137-719	924137-720	924137-721	924137-722	924137-723	924137-724	924137-725	924137-726	924137-727	924137-728	924137-729	924137-730	924137-731	924137-732	924137-733	924137-734	9
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This chart graphically illustrates the flow of paperwork involved in blanket orders via mail service. Similar procedures are followed when TWX is used to inform the vendor.

### What's the Payoff on Blanket Orders?

General Electric's Capacitor Department realized that switching to a blanket order procurement system was the answer to its previously unwieldy buying procedure. But they hardly expected the startling benefits that were actually achieved. Careful study of the results of switching to blanket orders showed that:

- Purchasing paperwork was cut 50%. Typing time was also cut in half and the number of order typists was reduced from three full-time girls to one part-time typist.
- Expediting was cut 70%; number of expeditors was cut from three to one.
- There was a 50% reduction in incoming invoices. Invoice checking became a part-time job.
- Clerical work in receiving was slashed 30%. Receiving was lowered from three to two.

With blanket orders there is no need for receiving to keep any files. Nor does the receiving clerk have to prepare extra receiving reports for partial shipments.

#### Bypass Receiving

Because receiving records are eliminated, it is not even necessary to have all material go through receiving. Instead, many items are delivered directly to stock where

the clerk forwards the packing slips to purchasing and production.

The same vendor may make as many as three shipments per week. He issues only one invoice per month, itemizing the shipments by packing slip number, quantity and date. Once a month, purchasing matches this invoice with copies of the packing slips. After being checked out, both invoice and packing slips are for-

warded to accounts payable for payment. By eliminating incoming invoices for each shipment, incoming as well as outgoing paperwork is greatly reduced.

The vendor assumes full responsibility for meeting the delivery date specified on the release. If he is unable to meet a specified date, he notifies purchasing per agreement, and a new date is worked out with production before the original due date is reached. As a result, expediting is markedly reduced, and the vendor's shipping promises are more reliable.

Non-production items and shop supplies are handled in the same manner as production items, except that the request for material form that comes from the originator is mailed to the vendor by purchasing (or telephoned in a rush situation) without any typing operation. The vendor returns the Request for Material form to the originator via purchasing, supplies the item or items along with the three copies of the packing slip to serve as receiving reports.\* (The purchasing copy of the P.O. is priced.) Once a month the vendor sends an itemized invoice to purchasing. It is understood that the supplier will always be competitive and periodic audits are made by purchasing to make certain they are getting the best prices available.

This simplified purchasing procedure has resulted in faster, more efficient and less costly order processing. It also gives purchasing more complete control. Vendors, too, benefit from reduced paperwork and are unanimous in their praise of blanket orders when they are handled this way. In fact some vendors are trying to interest other General Electric Departments in adopting the system.

Several suppliers have installed TWX and are very satisfied with the results. As for ourselves we have found that TWX gets our order to the vendor faster than telephone. In addition, it gives both us and the vendor a record including the confirmation and allows purchasing personnel more time for other jobs. It is also less expensive than telephone.

# One Buying Department Saves for Ten Plants

*Another case where a company found that the solution to its multi-plant purchasing operation was centralization. Have one central-buying department save time, money and manpower.*

By Leonard Sloane

**I**F YOU WERE the purchasing director of a diversified, multi-plant company that bought around \$25 million worth of material annually, how would you set up your organization?

Many P.A.'s might feel that a decentralized approach would be best, with each plant purchasing agent responsible for his own buying. Others might support a centralized operation, with some limited authority for buyers at the individual plants.

However, Frank J. Jakes, director of purchases for Sun Chemical Company, makes use of a system that takes advantage of what he calls his "clinical group." All purchasing for Sun's plants within a 200 mile radius of the corporate headquarters in New York is done by Jakes and his four P.A.'s. None of the ten plants have any purchasing agents or buyers.

## Buying Specialists

Jakes feels that centralization has many advantages for his company (a major producer of graphic arts materials, chemicals, paints and finishes). One of the obvious benefits of centralized purchasing is that it makes it possible to cash in on volume discounts. In

addition, Jakes has been able to staff his department with commodity specialists who really know their business. He's also able to get along with fewer people than would be the case if he had to have a buyer at each plant who in many cases would be duplicating the work of the headquarters' staff.

The company issues from 36,000 to 40,000 purchase orders a year for over 3,000 separate items. Requisitions from the plants clear through Jakes' 13-man department. This makes it possible for him to keep tabs on everything purchased by Sun's plants.

To assist his buyers—along with executives in production, engineering, and other departments—Jakes periodically issues two bulletins. The first is a raw material bulletin, designed to provide up-to-the-minute information about the materials purchased by Sun. It's based on Jakes' knowledge of market conditions and the experience he's gained from 35-years in the chemical industry.

## Price Changes

The other bulletin is a monthly price change list. Changes are listed by the code number set up

for each class of items purchases. The list tells how much the price of each item is expected to go up or down and alerts buyers and requisitioners to impending price hikes.

Jakes is personally responsible for all long-term contracts with vendors. These are generally negotiated for one year, with quarterly protection provided. The buyers, each a specialist, handle products in these general fields: one man for colors, solvents, and oils; one man for resins, waxes, and chemicals; one man for containers, laboratory supplies, and special projects; and one man (a trainee) for printing and miscellaneous equipment.

## Inventory Clerks

Does Jakes find it inconvenient not to have purchasing agents at the plants? Not at all. "The plants are all close enough to process their requisitions through us and get good service," says Jakes. "Naturally we need P.A.'s at our Chicago and San Francisco plants. But for the rest of our operations, all the purchasing can be done right here at headquarters. Whenever it's necessary for the P.A.'s to visit the plants, they do so."

One reason trips to the plants can be held to a minimum is the fact that there are inventory clerks at each location. These clerks receive copies of the receiving reports and handle all normal expediting with suppliers. They are also permitted to advance the date of delivery or push it back one week. However, they cannot increase or decrease the amount to be purchased—this can only be done by the P.A.'s at headquarters.

Whenever Sun makes an acquisition of a company within 200 miles of New York, Jakes has a regular procedure for integrating the purchasing personnel into his overall operation. For some time, the purchasing department of the acquired company is unchanged. P.A.'s from headquarters maintain constant liaison with the new department and are available for consultation and aid.

After the new company is firmly implanted as a member of the Sun family, the actual purchasing operation is moved to corporate headquarters.

Jakes, who has been blind since 1940, has a fantastic memory for detail. This is especially important in the chemical industry, with its host of specifications, prices, and future guarantees that change from day to day. Jakes uses the association method to keep track of the thousands of items he must remember.

#### Error in the Specs

He is able to recall most of the correspondence, requisitions, and purchase orders which are read to him daily by his secretary. He always carries a small pad and pencil with him to write down anything he hears that's important. He seldom forgets.

For example, after one reading he was able to detect an error in the specifications of a resin that had been in the producers' handbook for over a year. According to the specs, the solvent was to be "xylol plus 5% of butanol." Jakes asked a simple question that left the salesman all shook up: Did the 5% apply to the solvent or to the total solution? It seems no one had ever asked about that in the eight years the product had been on the market,

INTERFIRM CORRESPONDENCE		SUN CHEMICAL CORPORATION	
TO	FROM	LOCATION	P. J. JAKES
LOCATION	LOCATION	DATE	Sept. 24, 1958
ANSWERING	ANSWERING	SUBJECT	RAW MATERIAL BULLETIN NO. 125
PRICE ADVANCE STEEL CONTAINERS			
<p>The effective date of the price increase has been postponed from September 15 to October 1. This means that the same precautions should be taken for inventory replacement as was recommended in our Raw Material Bulletin dated September 3. However, you will have until next Wednesday to accomplish this. It is important that, should you have received deliveries prior to October 1, you do not pay the new price unless the announced advance applies, or that you receive credit if you were invoiced at the higher level. All suppliers have announced their intent to be competitive until October 1. However, it is still desirable to check any deliveries in the second half of this month to be sure that new prices were not applied inadvertently.</p>			
PRICE INCREASE ISOPROPYL ALCOHOL			
<p>Effective October 1 all grades will advance .05 per gallon.</p>			
ETHYL ALCOHOL PRICE INCREASE			
<p>Regular and Anhydrous Alcohol grades will advance .06 per gallon. Special formulations, such as number 40, will increase .08 per gallon, effective October 1.</p>			
PRICE ADVANCE CYCLOHEXANOL AND CYCLOHEXANONE			
<p>Also, effective October 1 both of these products will advance .02 per pound.</p>			

#### INVENTORY PRECAUTIONS

CODE NO.	NOMENCLATURE	EFFECTIVE DATE	LAST PRICE CHANGE	
			PER UNIT	PER LB.
10-11	Zinc Oxide XX55	8/1/58	.015	1lb.
10-107	Phenox C-400 Talc LIC	1000	.01/	1lb.
10-121	1/2 Valencia Pumice	2000	.01/	1lb.
10-151	Metal 300	LTL Per ton lots	.032	1lb.
10-15	U.S. Clay	8/1/58	.028	1lb.
26-25	Yellow Lake SGT. Green.	8/1/58	.150	1lb.
26-7	Cadolinith Lemon Yellow	1000	.010	1lb.
30-51	Orange Mineral 211	Over 5000	.01/	1lb.
	Less 5000	8/1/58	.1575	1lb.
10-105	Fl. Lithol S-30-F-10	5 Gal/kits	.695	1lb.
10-58	English Vermillion Y-Paste	Dras.	.677	1lb.
10-51	Red Oxide 5000	8/1/58	.113	1lb.
10-63	Lead Lead 27%	Less 5000	.01/	1lb.
90-15	Burnt Umber 1114	5000	.1285	1lb.
90-52	Keystone Filler 73	2000	.01/	1lb.
90-129	Uflex 16	Ft. Worth T/L	.0013	1lb.
100-17	Litharge 721	Less 5000	.119	1lb.
130-4	Standard Aluminum Paste	205	.0004	1lb.
	50000	8/1/58	.01	1lb.
130-9	Aluminum Lining Powder #125	2000	.01/	1lb.
130-23	Aluminum Powder #30-7100	2000	.01/	1lb.
130-29	Aluminum Paste 1978	2000	.01/	1lb.
130-45	Standard Aluminum Lining Paste #30	50000	.01/	1lb.
130-17	20 Lb. Aluminum Paste	50000	.01/	1lb.
130-57	20 Lb. Fine Aluminum Lining Paste #30	50000	.01/	1lb.
130-59	Aluminum Paste #34	50000	.01/	1lb.
130-67	Aluminum Paste #115/593	2000	.01/	1lb.
200-381	Perfection Tallow B.M.	5 cal.	.0002	1lb.
	W.H.J. Tins	8/1/58	.0002	1lb.
200-217	Linseed, washed Recovered	Tins	.02	1lb.
200-269	Admireal 400-1	Tins	.01/	1lb.
200-251	Fl. Zinc Oxide Clearing	7/1/58	.1075	1lb.
200-253	Ardenol Y	7/4	.2225	1lb.
200-263	Polycond 011	5 cal.	.1585	1lb.
210-1	1502 Ink 011	Tacony	.160	1lb.
210-27	Ink 011 990	E. Ruth.	.15	1lb.
210-101	Ink 011 987	Horre. T/1000 cal.	.255	1lb.
220-27	Oil of Clove Leaf 5%	7/1/58	.005	1lb.
260-34	ML33-50 Beckosol	T/L	.235	1lb.
260-4	Aropac 9100	5/L	.1825	1lb.
260-5	Aropac 9105	5/L	.205	1lb.

and the salesman just didn't know.

Jakes is always ready to listen to new ideas presented to him by salesmen. Since he lost his sight, he has felt an obligation to salesmen who have kept him informed about new products and services. Salesmen, too, have a high regard for his integrity and fairness.

His summary of the qualifications for a good purchasing agent

1—Sun's raw material bulletin contains current data about the items brought by the company. Director of purchases Jakes prepares it for his P.A.'s and other departments in the company.

# NEW & NOTABLE

**the PURCHASE PANEL**

STATE OF NEW JERSEY, DIVISION OF PURCHASE AND PROPERTY

MARCH 1959

*Meet the Staff*

**CHARLES F. SULLIVAN**, Director of the Division of Purchasing and Property was born in Yonkers, New York, May 31, 1907. He is married, has one daughter and two grandchildren. He has resided Middlesex County for over 41 years. His college work took him into the fields of Municipal Engineering and Finance in the field of Civil Engineering Construction, and for over 20 years County Superintendent of Weigh Measures in Middlesex County. He is associate member of the New Jersey Society of Professional Engineers. For 12 years he served as a member of Brunswick Township Committee, a period of which he was Mayor. 1 member of the Township Planning Board for 10 years, Board of Health for 10 years, and served nine years on Board of Education, six years as President, this latter post to the Armed Forces.

World War II found him overseas in the Marine Corp in the Battle of Okinawa as Amphibious Corps, USMC observer. He received an award in November, 1945, for the service. He received the Certificate of Service for Postwar Service.

He is an officer and a member of the State and National levies.

**Director Sullivan** is a charitable, fund-raising, a member of numerous, and service organizations. The Kiwanis of Presidents and Lions, C

**Under the Microscope**

The Specifications, Tests and Inspections Section has issued a new specification for Foliage Green Enamel Paint for final coating on all bridges and structures of our State highway system. The new formulation was developed after considerable study and tests to insure minimum loss of the original gloss and color over an extended period of time.

Our Laboratory has furnished us with a final report on the comparison of standard federal specifications for varnishes with those of CURON. The report shows that varnishes of quality equal to federal specification costs \$5.65 per gallon for brand name products against \$2.44 per gallon when purchased direct from paint manufacturers. This is another example of the tremendous savings resulting in purchasing by competitive bidding from prime manufacturing sources.

The Inspection Section is maintaining a constant check on the aluminum license tag stock in it is received at the Prison Shop to insure proper quality control. This section will also participate in controlling quality in the production of 200,000 sets of precast aluminum license plates at the Coast Made Products Corporation, Lonoke, Arkansas.

A study is now being made on the possibility of using paper wipers, instead of the present cloth wipers, in the industrial shops and motor vehicle inspection stations. The wiping cloths have been causing considerable trouble because of non-uniformity of texture and weight, resulting in material losses and high inspection costs. If the paper wipers can be used, as a direct result of greater uniformity, greater savings and increased efficiency can be expected. The State Highway Department and the Motor Vehicle Bureau are now testing the paper wipers

and we hope to have final information by the time our April issue goes to press.

**NEW PRODUCTS** — One of the interesting new materials to come to our market is CURON, a flexible foam plastic which has many different characteristics and end uses. Half the weight and with twice the tensile and tear strength of latex rubber, CURON is an ideal material for institutional mattresses. It is tough and has a great infinity to most acids and alkalies solutions. Additionally, it will not support bacterial growth. CURON is non-allergenic and non-toxic, and has excellent fire retardant abilities. It can also be laundered or cleaned without adverse effects.

The Curtis-Wright Corporation is now manufacturing CURON for several end use products, including mattresses, pillows, blankets, and clothing interlining material, carpet cushion, general cushioning, insulation, decorative, acoustical thermal wall and ceiling covering. The product is available in all panel colors in tile or roll form.

Another interesting application of CURON is its ability to be laminated to surface fabrics for uses such as mattress, chair or table pads and place mats. Its open multicellular structure allows it to "breathe," which not only makes it an ideal insulation but provides far more comfortable cushioning.

CURON is the registered trade name for the Curtis-Wright Corporation's synthetic foam.

For more information on this new material, write to the Curtis-Wright Corporation, 18 Rockefeller Plaza, New York 20, N. Y., or if you are in New York, visit their permanent display at 61 West 49th Street.

A. E. WATOV, Section Chief

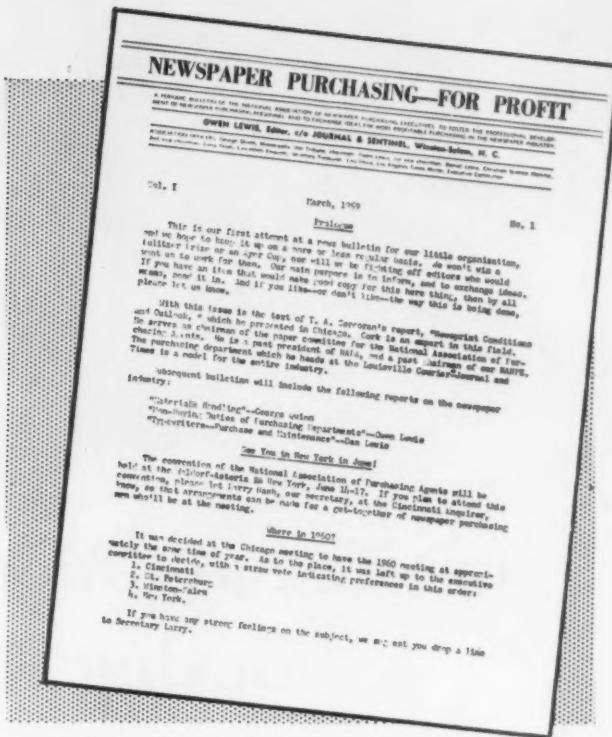
*A quick look at some worthwhile ideas and suggestions for improving your purchasing practice, developed by purchasing people in both industry and government*

## News of Purchasing

Purchasing problems, activities, and plans of the Division of Purchase and Property, State of New Jersey, are aired in a monthly 8-page publication. Charles F. Sullivan is director of the division. Deputies John R. Morgan and Herman Crystal are associate editors of the bulletin, "The Purchase Panel." Material is aimed at members of the division and requisitioning departments.

## News for Newspapermen

The newly formed National Association of Newspaper Purchasing Executives has lost no time in demonstrating their aptitude for their employers' specialty—communication. The first edition of their new bulletin carries news notes, classified advertising (for five press units), and the text of a talk on newsprint conditions and outlook by T. A. Corcoran of the Courier-Journal and Louisville Times.



### PROCEDURE FOR PURCHASE REQUESTS

- All purchase requisitions should be written on Form SD-201-2000D. Send the original to Purchasing Building 18, E.R.C. You may keep both copies for your files.
- A suggested vendor may be indicated. However, if a specific vendor is necessary, kindly indicate why at the bottom of the sheet.
- DATE NEEDED.** Please try to be realistic—use Actual Date Wanted.
- If a cash or telephone order is required, kindly indicate on the requisition.
- CONFIRMING ORDER.** An order must be placed verbally by someone other than the buyer, be sure to contact the proper buyer for a purchase order number. In this instance should a written order be given to the vendor or contractor without a purchase order number, this must be followed up by a requisition indicating the purchase order number and marked "Confidential Order—Do Not Duplicate." In most cases copies of this kind can be handled for you by the buyer.
- DESCRIPTION.** Try to be specific. Use a key word first, labeling the item if possible.
  - Show size and tolerance, if important.
  - Show electrical equipment, indicate if starting switches are required. Show motor specifications for example, 440 Volt, 3-Phase, 60 Cycle, AC. On plugs electrical equipment, indicate whether a grounded three-prong or four-prong plug is necessary.

### PROCEDURE FOR PURCHASE REQUESTS (cont'd.)

- On chemicals indicate grade (CP, AR, Technical, Pure, Purity, etc.)
- When indicating a catalog number reference, please identify the catalog used.
- ESTIMATED COST.** Approximate the cost of your expenditure. If quotations are needed, contact the proper buyer. On capital equipment, we will advise you if your estimate is out by 10 per cent or more.
- QUANTITY.** Show the specific number of items ordered such as:
 

1 Box (900) Not 1 Box
1 Drum (100) Not 1 Drum
1 Package (144) Not 1 Package
100 Grams Not 1 Bottle
- Order standard packages whenever possible.
- REQUISITIONED BY AND PHONE NUMBER.** The name and phone number of the person who will use the equipment—the person who should contact when questions arise.
- APPROVAL SIGNATURE.** Use proper divisional approval channels. All approvals must be in writing.
- CHARGE ACCOUNT.** Use your division's Accounting Code. This is your responsibility. Please see that it is correct.

**BUYING UNIT B**

Technical	3
Furnaces	
Furniture, Laboratory (Benches, Hoods, etc.)	
Gases, Cryogenic	
Gases, Sealed or Line	
Grinders	
Gauge, Brad, Pressure, Temperature	
Generators, Motor, Electric, Steam	
Glasses, Gauge	
Glassware, Lab	
Heat Exchanger Equipment	
Heaters - Units	
Hoists	
Hose, Rubber, Metal and Fittings	
Instrument Design and Development	
Instruments - Indicating, Recording, and Supplies	
Lab Analyses	
Lab Equipment, Apparatus and Supplies	
Lab Testing Services	
Landscape	
Machine Shop Services	
Machinery, Lab, Shop and Garage	
Materials Handling Equipment - Powered	
Metal - Precision	
Meters, Liquid Gas and Electric	
Mills, Hobbs	
Mixers, Blenders, Stirrers	
Motor Scooters	

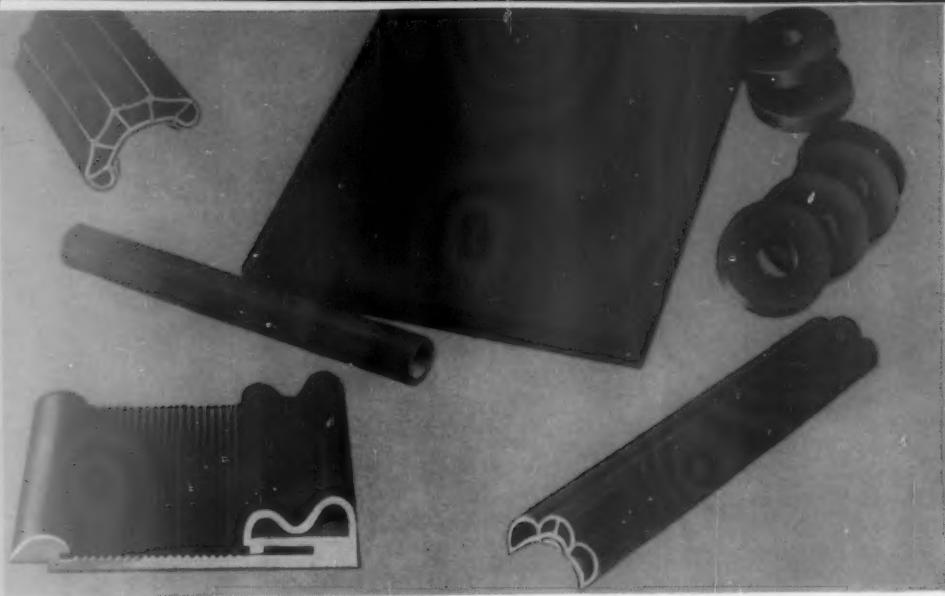
### SPECIFIC CLASSIFICATIONS OF PURCHASES

## Buying Directory—for Requisitioners

Purchasing directories for visiting vendors are fairly common. But Esso Research and Engineering Company has come up with one designed especially for the people who requisition items in the 140-

odd general classifications bought by the purchasing department headed by Harold Shahnazarian. (One of the more intriguing items: Bombs—Sample.) The attractive 24-page 4 3/4" x 7" booklet

lists the classifications, gives special instructions on how to requisition, how to handle local cash purchases for urgent requirements, and a great deal of other important information.



In buying extruded and lathe-cut rubber parts, buyers often spend more than is necessary because they specify tolerances that are tighter than what is actually required.

## How to Save Money Buying Rubber Parts

By Alvin O. Wolf

WITH RUBBER compounds costing from 10 to 75 cents a pound, buying lathe cut or extruded rubber parts is a tough and serious job for any purchasing agent.

Unless he knows what he is doing, he may end up paying a premium for parts which meet close tolerances when his needs can be met with wider tolerances, at a reduced cost.

### The buyer of extruded parts

Mr. Wolf is sales engineer for B.F. Goodrich Industrial Products Co., Akron, Ohio

meets with greatest success when he is able to furnish his supplier an exact, detailed picture of how any given part is to be used. With all facts at hand as to service conditions, the supplier then is in a position to furnish the right part at the right price.

It is advisable, too, to buy standard grades when conditions permit. When you get into special grades and special make-up items, costs go up accordingly.

In many instances, however, there is a definite need for spe-

cial make-up items. Some are extruded and others are hand built. In both cases, it is necessary for the supplier to develop special compounds, techniques or equipment.

The following check list was developed by B. F. Goodrich to help purchasing agents develop detailed specifications for practically all lathe cut or extruded rubber parts. Use this list to assure yourself of better products at fair prices consistent with service requirements.

### Check list for Purchasing Agents Buying Lathe Cut or Extruded Items —

What is the function of the part?

- a. Does it turn or is it stationary?
- b. Does it drive something, if so—what speed?
- c. Does it seal something, if so—where is the seal, ID, OD, or edge?

On what kind of equipment is it used?

- a. Is it for office use?
- b. Is it for industrial use?

Does it operate in or around Oil?

- a. If it does, what kind?
- b. Is there high temperature?

Are there any acids involved?

- a. If so, what is the concentration?
- Is there a high temperature involved?

a. If so, is it intermittent or constant?

b. Is it dry or liquid?

Is there abrasion?

a. If so, is it wet or dry?

What physicals are needed?

a. Durameter

b. Tensile

c. Elongation

d. Compression Set

e. Is there an ASTM spec involved?

Must the part be non-marking?

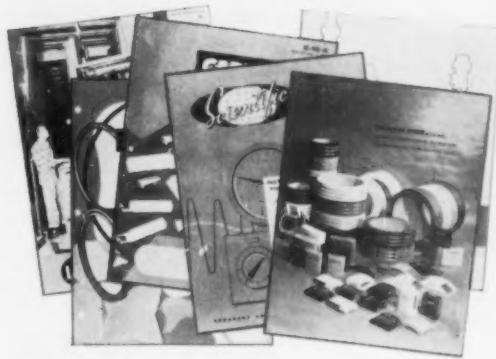
Is there pressure involved?

Must OD be concentric?

a. If so, should the grind be smooth?

# Advertising Claims: How Far Can the Seller Go?

*Purchasing agents are the logical targets of a great many sales presentations, product catalogs and advertising messages. It's only natural that a company will try to put its best foot forward in describing its products but there is a difference between "puffing" a product and making a misstatement of fact. Here are the details of a number of court decisions relating to this problem.*



By Albert Woodruff Gray

**I**N THE catalog of a wire rope manufacturer there were statements to the effect that the wire rope described was "unequaled in strength by any other wire rope of the same size for the same purpose. It is a safe rope for hazardous work and its lasting qualities eliminate the frequent changing of wornout rope thereby affording a great saving.

"In all the years of logging with wire rope in every section of timber country and under all the various conditions [the wire rope] has held place as the most thoroughly efficient logging rope manufactured. It possesses in the greatest measure all the essentials for this class of service. We construct the rope to fit the conditions."

Relying on these catalog claims, a Pacific lumber company purchased some of this rope. Within sixty days defects appeared. The lumber company's camps had to be shut down while the defective lines were repaired.

## Express Warranty

From an award of judgment to

this lumber company for damages the rope manufacturer appealed. In upholding the judgment, the Supreme Court of the State of Washington said in reference to these catalog statements:

"The agent of the manufacturer carried along with him and delivered to the purchaser the manufacturer's own printed matter containing almost the same guarantees that were made to the purchaser as to the quality of the wire rope and its ability to stand use. The affirmations contained in the catalog constituted express warranties when the purchaser had knowledge thereof and acted thereon.

"We consider it immaterial whether the guaranty be that shown by the statements and representations made in the catalog of the manufacturer or those made by the salesman. They were to all intents and purposes the same and induced the purchase."

## Misstatements of Fact

Neither instances of this type nor the law imposing penalties for such violations, are new. In

New Hampshire, many years ago, a steam heating equipment manufacturer issued a pamphlet which stated that the company's boilers "... should be durable in all construction and not liable to require early repairs."

Of the effort of the manufacturer to evade the consequences of these misrepresentations in their defense to a suit brought by a purchaser for breach warranty, the Maine court said,

"The representations of the manufacturers contained in their pamphlet and distributed by their authorized agent are as binding on them as though orally made by them to the purchaser or included in their bill of sale, the object of the pamphlet being to recommend their goods to the favorable consideration of purchasers."

In another instance of this character the printed catalog of a wagon manufacturer was shown to a purchaser in Harrisburg, Va. The catalog stated that the wagons unequalled in quality and further stated: "We warrant our wagons to be well made, of good, thoroughly seasoned material and of

sufficient strength to carry the weight mentioned in our catalogue."

After the wagons were purchased, they were found to be not only below the standard outlined in the catalog but inferior both in material and workmanship. Claims of the purchaser for damages due to the misrepresentations in these catalogs were sustained by the Virginia court.

"All the wagons were ordered upon the representations set out in the catalog and in the catalog they were expressly warranted to be 'well made, of good thoroughly seasoned material' and of sufficient strength to carry the weight mentioned in the catalog. It is certain that the purchaser was induced by it to enter into the contract in question and she had a right to rely upon it. It is therefore, as it purports to be, a warranty."

#### Facts and Opinions

The St. Louis Post-Dispatch a few years ago carried the advertisement of a hardware store: "Sensational Factory Purchase of 'Safety First' Ladders. In designing our ladders the uppermost consideration was safety—and that's exactly what you'll find in these splendid ladders. Imagine! A combination stepladder and straight ladder. Simply raise back section and you have a straight ladder. Drop the back section and you have a 'Rid-Jid' reinforced stepladder. Mighty strong and durable."

Showing this advertisement to a clerk a customer asked about the strength of the ladder. He was assured that the ladder was tested for two hundred pounds and that "it was very good wood." He purchased the ladder. Shortly afterwards the ladder collapsed and the purchaser was injured in the fall.

On an appeal by the victim of this accident from an adverse judgment, the dealer contended that these representations, both the advertisement and the assurances of the salesman, were but dealer's talk. In its award of damages to the injured buyer the Supreme Court of that state said of this defense,

"The seller's privilege to puff his wares, enhance their quality and recommend their value, even

to the point of exaggeration, is unquestionable so long as his salesmanship remains in the field of dealer's talk, commendation or mere expressions of opinion. Particularly do the obligations of warranty not apply when the seller's talk is confined to expressions of opinion and not affirmations of fact.

"Also dependent on the circumstances, assertions in hand-bills and advertisements as to the quality or conditions of chattels may not, as a matter of law, be construed as warranties and certainly not if they do not become a part of the contract of sale. But the seller's protection lies in the fact that his is the choice of language and action.

#### Restrictions on Language

"The tendency is to restrict the meaning and interpretation of the seller's language, especially as to the untruthful puffing of his wares and hold 'positive statements of quality affirmations of fact.'

Then of this particular advertisement and its unfortunate consequences the court continued, "But for the affirmation to constitute a warranty against so specific a defect it is not necessary that the defect be named. If there was a specific affirmation or representation of fact that the ladder was safe or sound, there was an express warranty of safety

or soundness which includes and covers the defect of cross-grained wood.

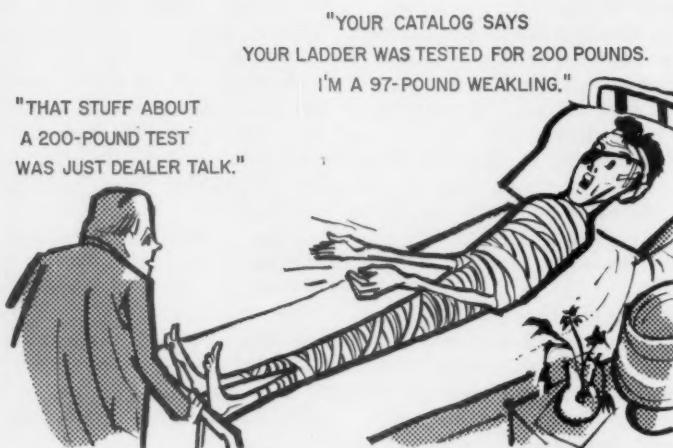
"Here assuming that the words 'safety first' in the headline describing the factory purchased ladders, were merely a trade name and ignoring them, the next sentence says, 'In designing our ladders the prime consideration was safety—and that's exactly what you'll find in these splendid ladders!'

"In describing the specific ladder the advertisement concluded, 'A Rid-Jid Reinforced Stepladder. Mighty Strong and Reliable.' Considering all the circumstances of the sale and particularly the quoted words, the ladder was sold with a positive affirmation of safety and soundness, an express warranty which included the latent defect of cross-grained wood."

Circumstances somewhat similar were involved a few years before in an action in a federal court in Pennsylvania. Printed advertising material had been delivered by a manufacturer to a dealer, implemented to the stimulation of sales of heating equipment.

#### Sales Puffing

Of a new heating regulator it was asserted in this pamphlet that its exclusive features placed it "far beyond competitive devices in quality of manufacture, dependability and precision of opera-



The courts hold that a seller may exaggerate the merits of his product so long as he is dealing in expressions of opinion—not affirmations of fact. In most cases when a seller makes a claim dealing with fact, the claim in effect becomes a warranty.



## Plexiglas door glazing could have prevented this!



See how PLEXIGLAS "gives" under the force of a blow!

Get SEE-THROUGH, SAFETY and SAVINGS by installing PLEXIGLAS® acrylic plastic glazing in plant doors, windows, skylights and partitions. It resists twisting, shock and vibration. Withstands chemicals and weather, installs easily. Look for the name of your nearest authorized dealer under PLEXIGLAS in the Plastics section of telephone directories in major cities.

*In Canada:* Rohm & Haas Co. of Canada, Ltd., West Hill  
Crystal Glass & Plastics, Ltd., Toronto



*Chemicals for Industry*

**ROHM & HAAS  
COMPANY**

WASHINGTON SQUARE, PHILADELPHIA 5, PA.

## CALL YOUR AUTHORIZED PLEXIGLAS DEALER

PROMPT DELIVERY • TECHNICAL ADVICE • FULL RANGE OF SIZES AND COLORS

For More Information Write No. 203 on Inquiry Card—Page 32

MAY 11, 1959

tion" and that in it there was the "same mechanical dependability that distinguishes all other products bearing the G. E. monogram."

Contending that these advertisements were statements of fact, a purchaser sued both the dealer and the manufacturer, recovered a judgment against the manufacturer which was promptly reversed on appeal.

"A careful examination of the matter contained in the advertising broadside does not in my judgment disclose any statement of fact upon which an action for deceit can be founded," said the appellate court. "It is elementary that mere commendatory statements called 'dealer's talk' or 'trade talk' are not actionable because these are generally regarded as mere expressions of opinion not likely to be over strongly relied upon, especially where the parties deal upon equal terms.

"Of course the dealer's immunity from responsibility for such statements is not absolute and a number of recent decisions seem to go to a considerable distance in cutting it down. The limits of such immunity are not sharply defined and whether in any given case a misrepresentation is or is not actionable must depend upon the particular circumstances involved."

#### **Don't Believe It**

An advertisement for a vacuum cleaner stated that it was absolutely perfect in even the smallest detail, a necessity which everyone could afford, so simple a child of six could use it, the only sanitary portable cleaner on the market and that perfect satisfaction would result from its use.

In a suit brought by a purchaser it was maintained that these statements were fraudulent representations. Characterizing such sales talk the federal court said:

"There are some kinds of talk which no sensible man takes seriously and if he does he suffers from his credulity. If we were all scrupulously honest it would not be so but as it is neither party usually believes what the seller says about his own opinions and each knows it.

"Such statements like the claims of campaign managers before elec-



"Let the buyer beware" has been a long-standing doctrine. However, more and more, the courts seem to be tending toward the belief that the doctrine of "let the seller beware" should be an equally important tenet.

tion, are rather designed to allay the suspicion that would attend their absence than to be understood as having any real relation to objective truth."

In a Cleveland, Ohio newspaper a motor truck dealer's advertisement read:

"Used Truck Bulletin. Do you know that a high grade used truck rebuilt and renewed is a better buy and of more substantial value than a cheap new truck? A rebuilt Packard is practically a new truck as far as wearing qualities and operating efficiency is concerned. A rebuilt Packard carries the same warranty as a new truck."

As a result of this ad, a buyer paid \$4200 for a five-ton rebuilt truck. A few months and he had spent a thousand dollars in repairs and sued the sales company on the guarantee he claimed was represented in the advertisement.

The Ohio Supreme Court held that the buyer was entitled to recover. "When a man buys a horse," asserted that court, "he hardly needs a warranty that it

is a horse or that it is not a mule or a camel. It may be urged that this is a substantial modification of the old doctrine—let the buyer beware. Is it not high time however, that that doctrine should be somewhat modified, at least that it should have no higher place in business life than the doctrine—let the seller beware.

"There is entirely too much disregard of law and truth in the business and social and political world today. I am using this term in its broad sense. Constitutions, sound legal and ethical principles are becoming little more than mere scraps of paper not only between individuals but among states and nations.

"It is time to hold men to their primary engagements to tell the truth and observe the law of honesty and fair dealing. Such a change, in my judgment, would not be so much in the line of revolution as in the line of reasonable reform. Honest men need not fear it. Dishonest men should be kept in fear of it."

#### **REFERENCES**

*Leschen & Sons Rope Co. v. Case Shingle & Lumber Co.*, 276 *Pac.* 892, *Washington*, May 1, 1929  
*Smilie v. Hobbs*, 5 *Atl.* 711, *New Hampshire*, July 30, 1886  
*Milburn Wagon Co. v. Nisewarner*, 19 *S.E.* 846, *Virginia*, June 14, 1894  
*Turner v. Central Hardware Co.*, 186 *S.W.2d* 603,

*Missouri*, April 2, 1945  
*James Spear Stove & Heating Co. v. General Electric Co.*, 12 *F. S.* 977, *Pennsylvania*, September 12, 1934  
*Vulcan Metals Co. v. Simmons Mfg. Co.*, 248 *Fed.* 853, *New York*, February 13, 1918  
*Meyer v. Packard Cleveland Motor Co.*, 140 *N.E.* 118, *Ohio*, December 29, 1922

For More Information Write No. 204  
on Inquiry Card—Page 32→  
**PURCHASING**



*Now...from Durkee-Atwood*

# DA 358 V-BELTS

*Introducing the entirely new  
V-Belt concept for compact,  
Plus-Power Drives*

From Durkee-Atwood, pioneer manufacturer of high quality V-Belts for industry, comes the great new "DA 358" V-Belt, opening up completely new opportunities for highly compact, economical multiple V-Belt drives. "DA 358" V-Belts are engineered for unprecedented power transmission as compared with conventional V-Belts...with the ability to transmit more horsepower in a given area, at less cost, and with fewer belts, smaller, lighter sheaves and shorter center distances. They are manufactured with the quality and precision for which Durkee-Atwood is famous—quality which we invite you to test. Manufactured in 3V, 5V and 8V sizes.

**SPECIAL:** Durkee-Atwood's new "Red Shield" V-Belts now have a *horsepower rating 40 per cent higher than former Standard V-Belts*—part of a major V-Belt upgrading program for improved drive design.



"DA 358" V-Belt drive superimposed over a conventional V-Belt drive of the same capacity illustrates the dramatic savings in space, offering new possibilities in more economical machine design.

*We invite you to test DA 358 V-Belt  
against all other V-Belts*

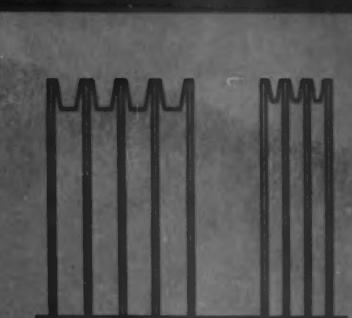
Write on your letterhead giving data, and we will forward to you our engineering recommendations.

*Write*

**DURKEE-ATWOOD  
COMPANY**

MINNEAPOLIS 13, MINNESOTA

*Look for the*  *on your V-Belts*



**SHEAVE WIDTHS** are sharply reduced with a "DA 358" V-Belt drive. Figure at left shows sheave width for a conventional drive. Figure at right is sheave width for a comparable "DA 358" V-Belt drive.

### Distributor Training Program Really Pays Off

**A** NEW concept in distributor training has been established by Parker-Kalon division of General Transportation Corporation, Clifton, N. J.

The company—manufacturers of self-tapping screws and other fasteners—has set up a fastener specialist training program. This one-week course trains distributor salesmen to become specialists in selling all types of fasteners to purchasing agents.

#### **Selling Through Distributors**

Parker-Kalon created this new program when it found that its distributors were losing orders to companies that sold directly to purchasing agents (P-K sells only through distributors). Many P.A.'s for original equipment manufacturers felt that they were paying extra money to the distributors even though Parker-Kalon was shipping directly to them.

A two-pronged attack was devised by president W. T. Ylvisaker to solve this problem. First—through a bulk stocking program—commissions for a key nucleus of 250 distributors were increased from 10% to as much as 25%, thereby encouraging them to promote sales of Parker-Kalon products. The company was able to make up the difference through increased volume and a sharp re-



Distributor salesmen who participate in Parker-Kalon's one-week fastener specialist training program learn all the angles of screw manufacture.

duction in the number of small orders.

The second part of the plan was the establishment of the training program. Key salesmen for P-K distributors throughout the country come to the company's headquarters for an intensive course in fasteners. About 50 salesmen in the five classes that have already completed the program learned how fasteners are manufactured, sold, and used. They become the specialists in the fastener line for their distributors when they return.

#### **Increased Production**

Distributor salesmen who have completed the course are able to

give purchasing executives the same kind of service that any manufacturer can. This has resulted in many more orders—and a large increase in Parker-Kalon production and sales.

Complete expenses for the training program are paid by Parker-Kalon. Distributors pay only the transportation costs for their salesmen.

The company has received many letters from fastener salesmen who have discovered in recent weeks how much the course has helped them. Their comments about greater acceptance from P.A.'s indicate the value that both Parker-Kalon and the distributors have realized from this program.

For More Information Write No. 205  
on Inquiry Card—Page 32→  
**PURCHASING**

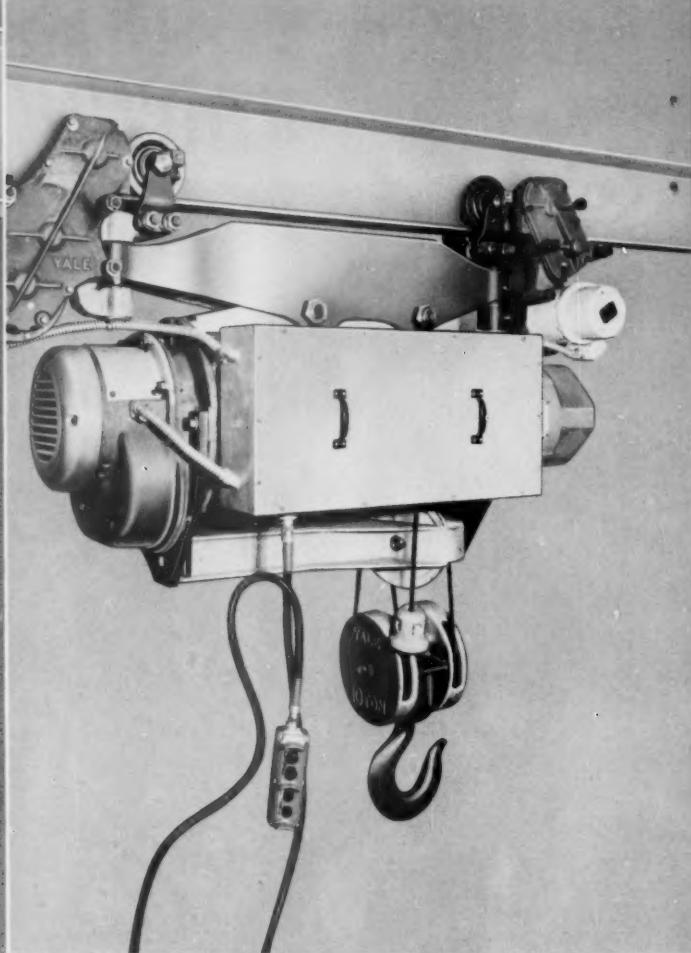
OVERHEAD  
PRODUCTION  
COSTS COME  
DOWN...YOUR  
PROFITS GO UP



# YALE'S 4 NEW LINES OF MAJOR ECONOMIES IN YOUR



**NEW YALE LIGHTWEIGHT TROLLEY HAND HOIST CUTS COSTS 4 WAYS!**  
Economical because it offers up to 95% efficiency—lifts  $\frac{1}{2}$  to 12 tons with amazing speed for a hand hoist—has shielded bearings prelubricated for life—fewer parts to maintain. Synchronomatic load break spells extra safety. Light aluminum casing provides greater maneuverability. Trolley an efficient headroom saver of maximum flexibility. For all its lightness, this new Yale hoist is durable—depend on it to give year-after-year-after-year service.



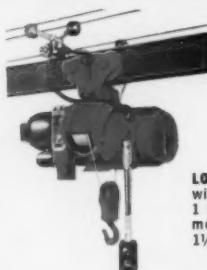
**NEW YALE SELECTRON 5-SPEED HOIST CONTROLLER CUTS COSTS THROUGH LOW INITIAL INVESTMENT—PREVENTS LOAD DAMAGE.** Exclusive design of hoist motor and controller combination permits precise speed control at cost, unavailable before except with high-cost, elaborate systems. 5 independent speed points from creep to high! Assures smooth starting of delicate or heavy inertia loads! Gives multi-speed regulation where constant or variable loads must be accurately spotted. For hoisting or crane operation on Cable King Electric Hoists.



**LOAD KING HAND HOIST.**  
Rugged, lightweight, portable.  
High mechanical efficiency.  
Capacities:  $\frac{1}{2}$  to 12 tons.



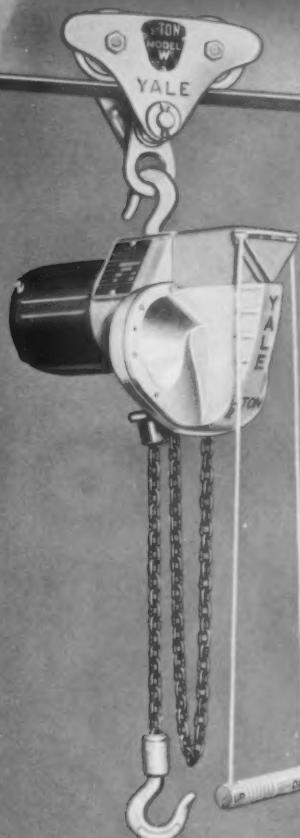
**CABLE KING ELECTRIC HOIST.**  
Exclusive air-cooling system  
for continuous heavy duty.  
Capacities:  $\frac{1}{4}$  to 15 tons.



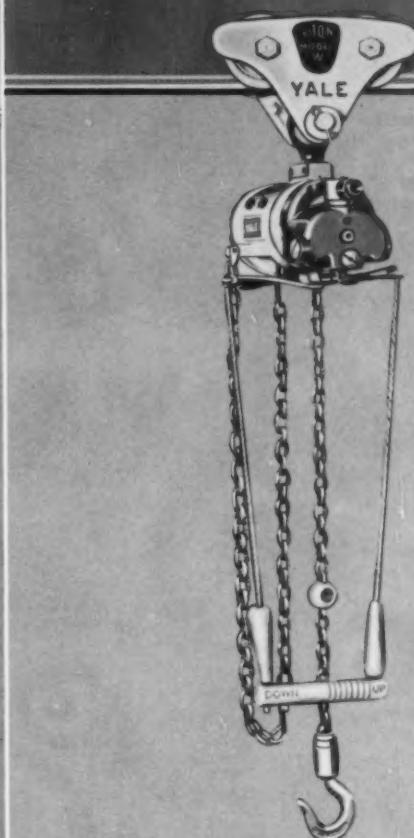
**LOAD KING ELECTRIC HOIST,**  
wire rope models  $\frac{1}{4}$ ,  $\frac{1}{2}$  and  
1 ton capacities. Link chain  
models  $\frac{1}{4}$ ,  $\frac{1}{2}$ ,  $\frac{3}{4}$ , 1 and  
 $1\frac{1}{2}$  ton capacities.

FOR THE MOST ECONOMICAL, DEPENDABLE AND DURABLE OVERHEAD HANDLING EQUIPMENT AVAILABLE.

# HOISTS WILL EFFECT OVERHEAD OPERATIONS



**NEW YALE LINK CHAIN MIDGET KING ELECTRIC HOIST CUTS COSTS THROUGH SPEED!** This electric hoist speeds production for only a few pennies a day. Flexible, maneuverable link chain lets you reach out for a load instead of having to be right over it. Easy-to-operate one-hand grip control. Two-brake safety—motor brake for spotting and inching—Weston-type, self-actuating load brake acts as lowering speed governor, sets automatically in event of motor brake failure. Safety limit stops—fracture-resistant hooks—lifetime alloy gears—precision ball bearings. Capacities:  $\frac{1}{2}$  to 2 tons.



**NEW YALE AIR HOIST CUTS COSTS BY MINIMIZING HAZARDS!** Air-cooled motor cannot overheat—explosion-proof—lessens fire hazard. Smooth lifting and lowering protects against spillage and property damage. Motor cannot burn out. Maintenance minimized by fewer moving parts. Automatic brake locks when power is off. The safety and maintenance features of this quiet-operation hoist pay off because they're economy features, too! Capacities:  $\frac{1}{2}$  to 1 ton—hook or trolley models—roller or link chain—lever pendant or pull cord control.



**RAIL KING TRACTOR TROLLEY**  
—motor driven. Push-button control—pulls any type equipment. Capacities:  $\frac{1}{2}$  to 3 tons.



**MIDGET KING ROLLER CHAIN  
HOIST** with 2 brake safety—motor  
brake and load brake.  $\frac{1}{2}$ ,  $\frac{1}{4}$ ,  $\frac{1}{2}$ ,  
1 and 2 ton capacities.



**PUL-LIFT**—portable. Roller-  
chain models  $\frac{1}{4}$  to 15 ton  
capacities—link chain models  
 $\frac{3}{4}$  to 3 ton capacities.

CHOOSE FROM YALE'S COMPLETE LINE OF ELECTRIC, AIR AND HAND HOISTS, PUL-LIFTS AND TROLLEYS

# A GOOD MAN TO KNOW ...YOUR YALE HOIST DISTRIBUTOR

He carries the finest, most complete line of overhead materials handling equipment available—the Yale line.

He is a well-established, responsible businessman interested in his community—and your overhead production problems.

You can depend on his knowhow in advising you as to the best hoist for the job.

His men are skilled and trained—often graduate engineers. They know hoists and overhead production problems.

You can depend on him for prompt, efficient service.

You can depend on him for prompt and courteous attention to your order.

You can depend on him for prompt delivery.

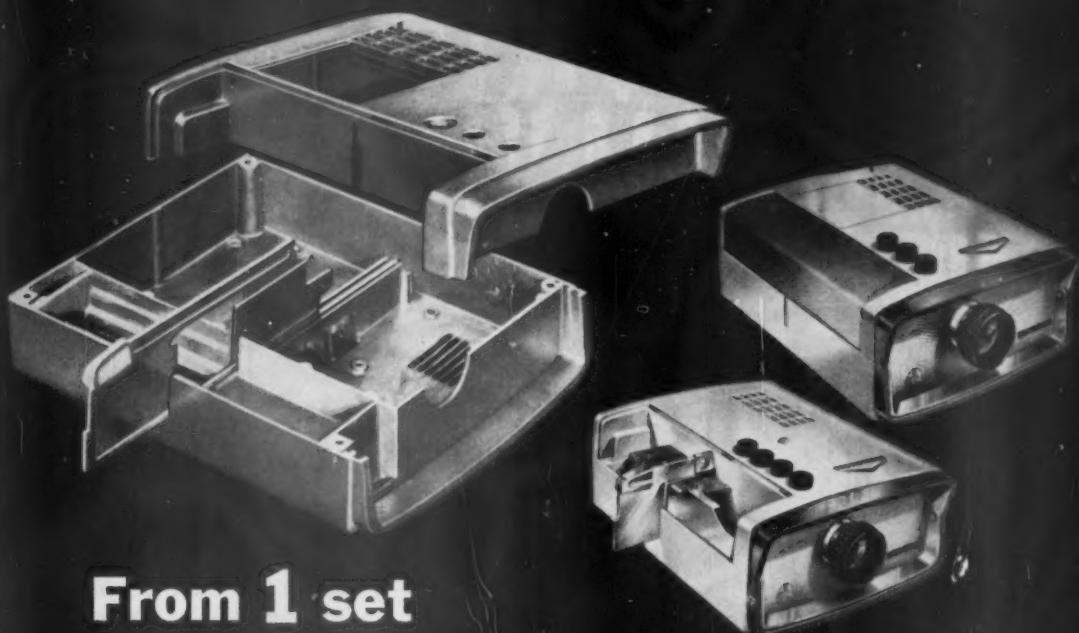
And to supply him promptly and keep him adequately stocked there is the vast Yale field organization which maintains 65 conveniently located parts depots and 24 repair centers.

For further information contact your Yale Distributor (he's listed in the Yellow Pages) or write to Yale & Towne Mfg. Co., Yale Materials Handling Div., Philadelphia 15, Pa., Dept. ZH-4-H.

Yale Materials Handling Division, a division of The Yale & Towne Manufacturing Company. Manufacturing Plants: Philadelphia, Pa., San Leandro, California, Forrest City, Arkansas. Products: Gasoline, Electric, Diesel and LP-Gas Industrial Lift Trucks • Worksavers • Hand Trucks • Warehouses • Industrial Tractor Shovels • Hand, Air and Electric Hoists



**YALE®**  
INDUSTRIAL LIFT TRUCKS  
TRACTOR SHOVELS • HOISTS  
**YALE & TOWNE**



## From 1 set of die castings Brumberger makes 2 different products

CASE HISTORIES FROM  
MT. VERNON FILES

If you like to project color transparencies, these two new automatic Brumberger\* 35 mm, low silhouette, slide projectors will dazzle you. They are priced much lower than other automatic projectors and eliminate the additional expense of slide magazines and extra carrying case.

These are fine examples of keen engineering perception, for all the inherent advantages of die casting have been applied with those of metal stampings and plastics to produce competitively priced photographic products of outstanding eye appeal and performance.

As you can see, these aluminum die castings are intricate. All the necessary slots, channels, pins, gratings, bosses, holes, compartments, handle holes and various recesses are incorporated into the shells so that simple, rapid assembly and minimum finishing operations of the final product result.

Heat from the projection lamp will not warp or weaken the castings, and correct alignment of the optical system is maintained at all times by the thin but rigid, lightweight sections. For Brumberger, die casting has proved to be a supremely advantageous manufacturing method.

### SALES REPRESENTATIVES

BIRMINGHAM, ALA.: Mr. I. B. Armstrong, Jr., P. O. Box 2244  
BROOKLYN, N. Y.: Mr. Robert V. Moore, 2317 Plumb 2nd St.  
CLEVELAND, OHIO: Mr. Grant Eller, 6 East 194th St.  
GUILDFORD, N. Y.: Mr. David H. King, 75 Willow St.  
LUTHERVILLE, MD.: Mr. C. McIntosh Gordon, Box 55, R.R. No. 1  
PITTSBURGH, PA.: Mr. Andrew W. Anderson, 300 Pasadena Drive So.

More than that, Brumberger has made full use of Mt. Vernon's complete four-fold service: coordinated designing, die making, casting and machining facilities all under one roof in 200,000 square feet of manufacturing space.

And when you plan to make a better product at lower cost by resorting to die castings, we can also give you invaluable help. Just call in your nearest Mt. Vernon sales representative for fast service.

\*Brumberger — Brooklyn, N. Y.



Die Casting  
Research  
Participant



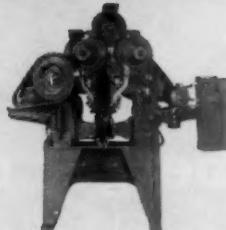
QUINCY, MASS.: Mr. Edmund W. Libby, 91 Merrymount Rd.  
ROCHESTER, N. Y.: Mr. William Sauers, 101 Briarcliff Rd.  
SKANEATELES, N. Y.: Mr. Jerome J. Theobald, 9 E. Genesee St.  
STAMFORD, CONN.: Mr. Anker Anderson, Cascade Road  
VALLEY FORGE, PA.: Mr. G. T. McMaster, P.O. Box 115

Speed up

# RIVETING and CLINCHING

Automatic feeding and setting with

## T-J



**RIVETS 4 AT A TIME!** Special quadruple riveting unit, incorporating two Model "RR" Twin Rivitors, mounted on a special welded, steel base. Equipped with air-operated hold down mechanism and a safety air trip arrangement. Toolled for riveting left hand and right hand automotive muffler bracket assemblies.



**SPECIAL TWIN RIVITOR!** Toolled for 6 station indexing fixture, incorporating automatic clamping and ejecting mechanisms, for riveting laminated armature assemblies.



**T-J CLINCHOR** adapted to a wide range of clinch nut setting problems. Gravity Feed model shown here.

You'll realize *faster assembly . . . reduced labor costs* immediately, when you use T-J Rivitors and Clinchors for your production line. These performance-proved machines are designed to do a wide range of assembly jobs for aircraft, automotive, farm machinery—riveting jobs of all kinds.

T-J RIVITORS automatically feed and set solid rivets with high production. Electrically powered Rivitor sets solid steel rivets up to  $\frac{1}{8}$ " long. Throat depths 8" to 36".

T-J CLINCHORS set clinch nuts with fully automatic operation, controlled by a single foot pedal. Available in Underfeed and Gravity Feed models, throat depths 8" to 36".

Send today for these helpful references: Rivitor bulletins 646 and 555 . . . Clinchor bulletin 555. The Tomkins-Johnson Co., Jackson, Mich.



**TOMKINS-JOHNSON**

RIVITORS AIR AND HYDRAULIC CYLINDERS CUTTERS CLINCHORS

For More Information Write No. 207 on Inquiry Card—Page 32

## Products

### Improvements in Radial Drills



Improvements in its one, two, and three H.P. precision radial drilling machines have been announced by I. O. Johansson Co., Skokie, Illinois. Rear work platform has been enlarged to 21½ in. x 24 in. and is equipped with three  $\frac{1}{2}$  in. T-slots. Adjustable table at front of machine has three T-slots and is now available in two sizes, 20 in. x 28 in. and 20 in. x 40 in., ground to an accuracy of .004 in. over the entire surface. Sliding radial arm can be moved to within 5 in. of column or out to drill to center of 5 foot circle. Upright column is now a one-piece casting, and vertical movement of column permits maximum of 53 in. from spindle to working surface, minimum of 3½ in. New control panel consolidates all controls to left of drilling head, and speed ranges now extend from 60 to 2400 RPM.

Write No. 19 on Inquiry Card—Page 32



# ONLY MEAD OFFERS YOU THIS \$500,000 BOND!



Every Mead Bonded Container is guaranteed to equal or exceed the specifications set up by Rule 41, Uniform Freight Classification and Rule 5, National Motor Freight Classification. If Mead Bonded Containers do not meet these specifications, Mead will pay the full cost of the defective containers or rush replacements to you.

Want to know more about Mead Bonded Containers, Mead Containers research and design facilities? Wire or call collect the Mead Containers office nearest you.



#### MEAD CONTAINERS, INC.

Executive Offices, 4927 Beech St., Cincinnati 12, Ohio

National Sales Offices, 230 Park Avenue, New York 17, New York  
6124 N. Milwaukee Avenue, Chicago 46, Illinois and in principal cities.

Subsidiary of THE MEAD CORPORATION



For More Information Write No. 208 on Inquiry Card—Page 32

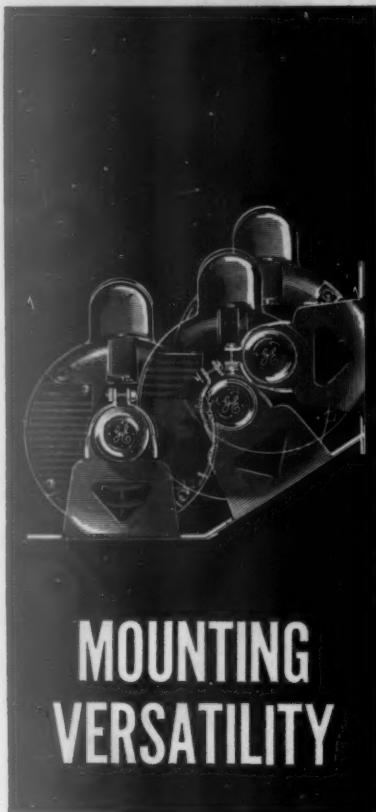
MAY 11, 1959

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## PURCHASING AGENTS...

# SIX WAYS



### Mounting Versatility

Cradle bases, both solid and resilient, allow rotation within base

You can rotate the Form G motor within the cradle base to take advantage of its drip-proof design, or you can position the motor with the capacitor at various angles for tight-squeeze applications. Or, you can remove the cradle base if you don't need it for your application. G-E Form G mounting versatility can mean greater design flexibility for you!



### Fast Rotation Change

Now you can reverse Form G shaft rotation in less than 10 seconds

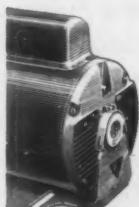
No need to specially order motors to meet your rotation requirements. G.E.'s Form G motor features a new wiring method that lets you change rotation in seconds. Quick connectors make the change fast and positive. Just interchange the two motor leads on the terminal board. That's all. Require fast, easy rotation change? The Form G is your motor!



### Easy, Direct Mounting

Close end shield tolerances allow direct mounting without costly machining

General Electric standard Form G's can be mounted directly on your product without expensive machining or costly brackets. Close end shield tolerances, plus inherent shaft-to-end shield concentricity, lets you mount General Electric's Form G's with simple through bolts. This feature could be a real money saver for you. Why not investigate it today?



GENERAL  ELECTRIC

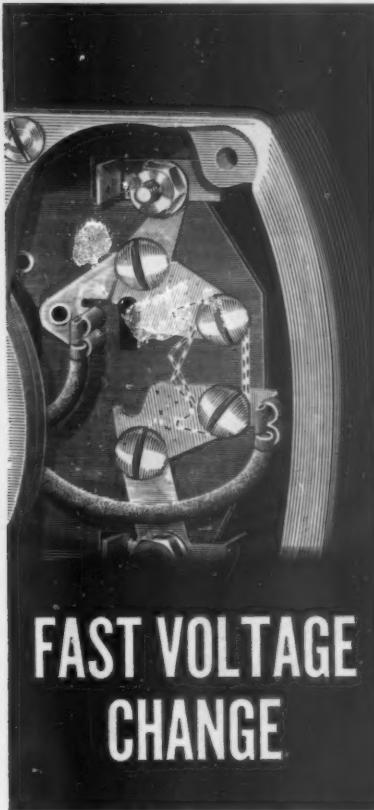
GENERAL  ELECTRIC

GENERAL  ELECTRIC

JUST ASK YOUR GENERAL ELECTRIC SALES ENGINEER

Cut costs with General Electric Form G motors . . .

# MORE VERSATILE



## FAST VOLTAGE CHANGE

Unique sliding plates on terminal boards make voltage change simple

Reduce inventory, simplify ordering—**you can change General Electric Form G motors from 115 v to 230 v operation (or vice versa) in 1/5th the time, without confusion and error. No special tools required! A screwdriver is all you need. Just loosen the four screws, pivot the plates to the new position and tighten the screws. That's all there is to it!**



## ALL-ANGLE OPERATION

Special bearing and oil retention system permits mounting in any position

Mount it horizontally, vertically—even upside-down—the new Form G has the versatility to match the design and space requirements of your product. An advanced bearing and full oil retention system allows you to mount the Form G in **any position** and still be sure of getting faithful motor performance. In any position, Form G's do the job!



## COMPLETE LINE

Full line of Form G's means the right motor for every application

There's a standard Form G motor to meet your exact product requirements. No need for costly specials. Over 850 basic models—and thousands of variations—are available on a mass-production basis. Let your General Electric Sales Engineer show you the all-around versatility of Form G motors and how they can provide important savings for you!

702-95

**GENERAL  ELECTRIC**

**GENERAL  ELECTRIC**

**GENERAL  ELECTRIC**

## ABOUT THE NEW FORM G "EXTRA VALUE" FEATURES

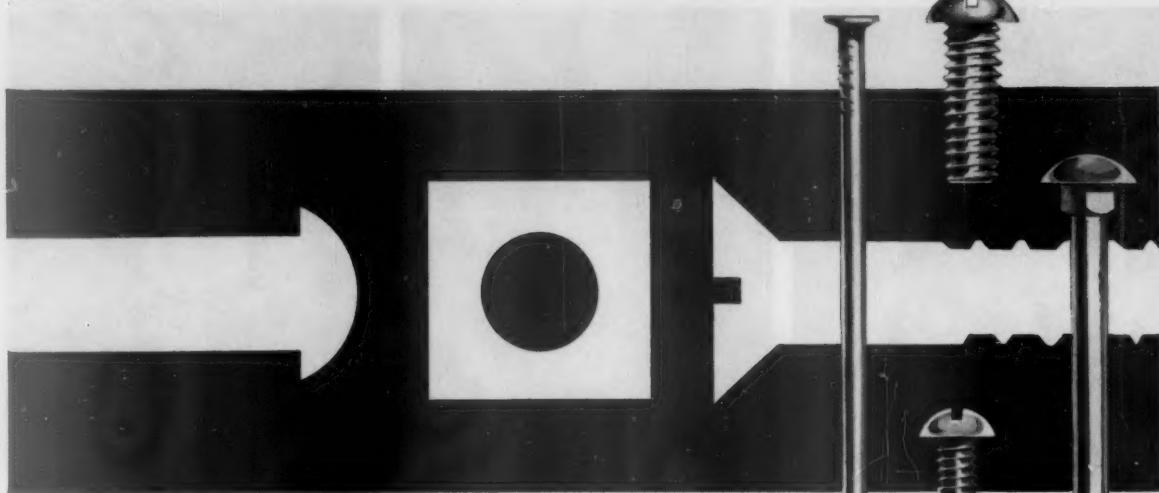
For More Information Write No. 209 on Inquiry Card—Page 32

MAY 11, 1959

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# ALUMINUM FASTENERS

lengthen product life...improve product quality



...and are the fasteners  
for use with aluminum components

One of the easiest ways to improve your product quality, and increase product life is to fasten all aluminum parts with aluminum fasteners. Fasteners of dissimilar metals can cause corrosion, rust, deterioration and weakened product performance. Coated fasteners are often damaged in the fastening process, and just cannot assure fastener—and product—quality.

Aluminum screws, nuts, washers, bolts, rivets and nails also offer many exclusive benefits with non-aluminum materials—wood, plaster, textiles and plastics, for example. Never rusting to cause stains, aluminum fasteners don't weaken, do provide a *sure, good-looking* fastening. Products and parts stay attractive, and are firmly held. No other fastening metal or material can offer these benefits at aluminum's low cost!

The next time you specify fasteners, consider aluminum. If you have fastener problems or would like further information on aluminum in fastener applications, write to the *Reynolds Metals Company, Box 2346-NB, Richmond 18, Virginia.*

Watch Reynolds Television show—"WALT DISNEY PRESENTS"—every week over ABC-TV

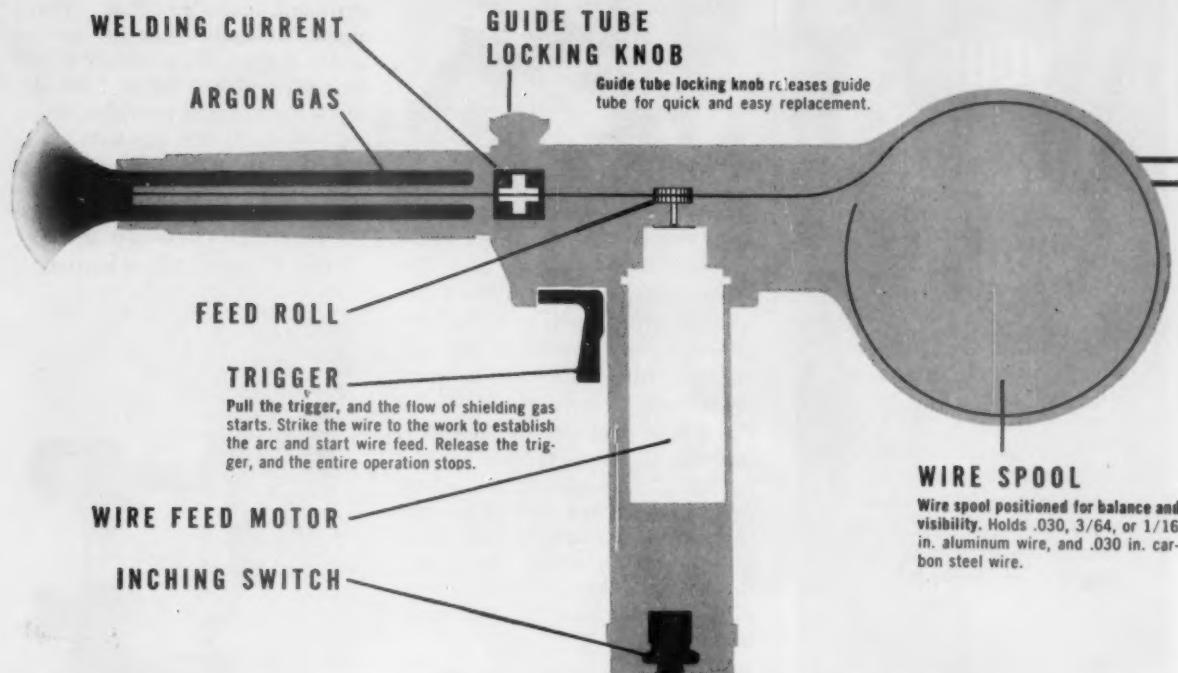
REYNOLDS DOES NOT MAKE  
ALUMINUM FASTENERS, BUT  
DOES SUPPLY THE FINEST  
QUALITY ALUMINUM TO THE  
FASTENER INDUSTRY...

Write today for the names of  
leading manufacturers.

The Finest Products  
Made with Aluminum  
are made with  
REYNOLDS  ALUMINUM

# Try LINDE'S New "SIGMETTE" Torch!

## -PORTABLE, COMPACT



Here's the torch that goes to the job—lets you work in any position . . . in confined spaces . . . at distance remote from the power source!

Designed for Sigma welding of light metals, the "Sigmette" torch is compact and sturdy. Notice the thin silhouette and position of the spool for complete visibility. Torch and control are completely insulated and grounded—the operator is protected from electrically "hot" parts. And the only maintenance tool needed is a screwdriver!

Find out how Linde's new "Sigmette" torch can speed your operations, bring new economies through its advanced design features. For a free demonstration and detailed information, mail the coupon today or call the nearest Linde Office.

Dept. PC-52, Linde Company  
Division of Union Carbide Corporation  
30 East 42nd Street, New York 17, N.Y.

Please send complete facts on the new "Sigmette" torch.  
 Please arrange to let me try it.

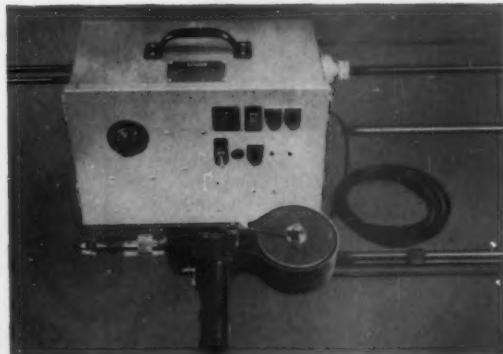
Name \_\_\_\_\_

Firm Name \_\_\_\_\_

Street \_\_\_\_\_

City \_\_\_\_\_ Zone \_\_\_\_\_ State \_\_\_\_\_

"Linde", "Sigmette" and "Union Carbide" are trademarks of Union Carbide Corporation.



Complete unit—torch weighs 3 pounds, 1 oz.; control weighs 19 pounds, 2 oz.; Current rating, 125 to 200 amp.; Welding power, direct current reverse polarity.



For More Information Write No. 211 on Inquiry Card—Page 32

# meet your LUSTRA man

a Lighting Specialist who can show you how to LUSTRA-lite for greatest economy!

LUSTRA'S superior design and construction insure that LUSTRA double-duty lamps burn brighter...longer...greatly reduce maintenance costs. LUSTRA actually adds to profits with GUARANTEED performance! Ask the LUSTRA MAN!

## At last! The First Color-True Fluorescents...LUSTRA NORTHLITE



Here's the engineer's dramatic lighting answer to the color control problem—Lustra Northlite—the first fluorescent to approximate the desirable lighting of the artist's skylight. This unique lighting permits every industry, every store, every producer of color-true products...in printing, textiles, or plastic...in department stores, dress salons, furriers, milliners, haberdasheries...in sales areas, work areas, display areas...to change from the present over-blue or over-red lamps to 24-month-guaranteed Lustra Northlite, approximating 5500°K. temperatures to a point where your color guess-work is ended. Now available in all standard sizes...for your present standard fixtures!

Send immediately for the full technical details on the amazing new LUSTRA NORTHLITE fluorescents!

LUSTRA-LITE NOW FOR MORE SALES!  
Dept. P-3

LUSTRA CORP., 32-33 47th Ave., L.I.C., N.Y.

LUSTRA—AMERICA'S DATED LAMPS  
For More Information Write No. 212  
on Inquiry Card—Page 32

## Products

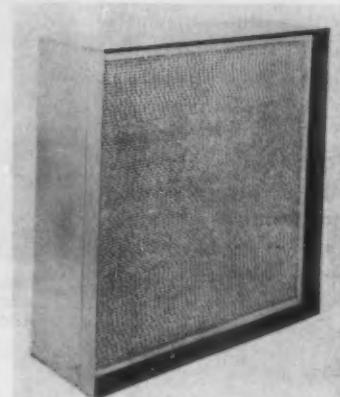
### Carriage, Machine Bolts



Stanscrew hex head machine bolts and carriage bolts are available in a broad range of over 500 different sizes. The full body hex head machine bolts are supplied either with or without finished hexagon nuts and have a minimum tensile strength of 55,000 PSI. Stock sizes include diameters from  $\frac{1}{4}$ " through  $1\frac{1}{4}$ " and lengths from  $1\frac{1}{2}$ " through 24". Stanscrew carriage bolts are offered in sizes from #10 through  $\frac{3}{4}$ " in diameter, and in lengths from  $\frac{1}{2}$ " through 18". Stanscrew Fasteners, 2701 Washington Blvd., Bellwood, Ill.

Write No. 20 on Inquiry Card—Page 32

### New High Capacity Space Filter

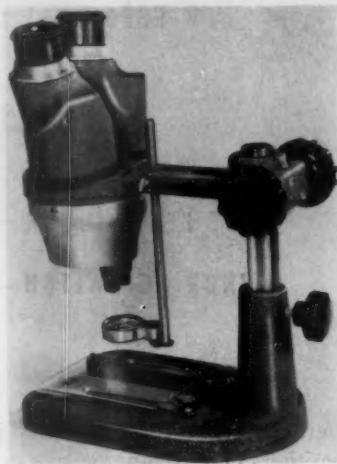


A new space filter with high dust-carrying capacity is available from Mine Safety Appliances Co., Pittsburgh. Equipped with long-lasting replaceable filter elements, it is designed for product and process control and for personnel

protection in handling toxic metals and radioactive materials. At least 99.97% efficiency in removing particles of 0.3 micron diameter is achieved. The versatile filter is used for high humidity service in research laboratories, food processing pharmaceutical photographic, optical and precision instrument manufacturing. Three models available—one for service to 250 degrees F., a second to 350 degrees, and a third to 1,000 degrees. Each model provides for 35, 50, 500, 1,000 cfm capacity.

Write No. 21 on Inquiry Card—Page 32

### Stero-Microscope with Low Power Attachment



Edmund Scientific Company of Barrington, New Jersey, is manufacturing a low-cost industrial stereo-microscope with low power attachment. For use in quality control, production line inspection, and small parts assembly, stereo-microscope provides three-dimensional vision and has many industrial applications, including checking air seals on cans, examination of textile samples, and inspection of work turned out by machine tools. Built for hard use, stereo-microscope has cast-iron base and aluminum body. Features include two sets of objectives on rotating turret for a variety of powers, standard range of interpupillary adjustment, helical rack, and pinion focusing. Additional eye-pieces and low-power adjustment give a power of 6, 10, 23, and 40.

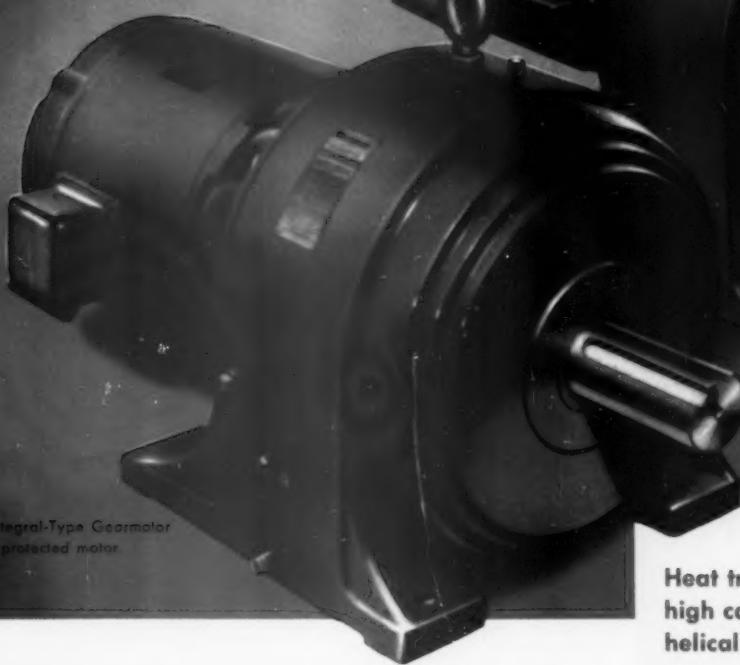
Write No. 22 on Inquiry Card—Page 32

For More Information Write No. 213

on Inquiry Card—Page 32—>

PURCHASING

# WAGNER Integral-Type Gearmotors



Wagner Integral-Type Gearmotor  
open protected motor.

Wagner Integral-Type Gearmotor  
with TEFC motor. Standard or  
explosion-proof.

## For the Power you want - At the Speed you need !

Wherever you need "slower than motor speeds" you can get positive speed reduction with plenty of power by using Wagner Gearmotors.

This extension to the Wagner line provides compact motorized drives, with both motor and gear housing of corrosion-resistant cast iron. Available with the latest NEMA Frame open protected or totally enclosed fan-cooled motors, they combine Wagner motor dependability with rugged, simplified gear units to give you speed reduction equipment designed for greater capacity and longer life in ordinary up to rough service.

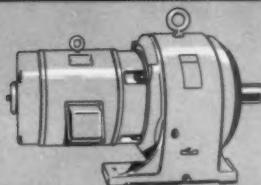
Wagner Gearmotors offer a wide variety of sizes in single, double, triple or quadruple reductions—horizontal or vertical foot or flange mountings—speeds from  $7\frac{1}{2}$  to 780 RPM. Write for Bulletin MU-227.

Whether you specify or apply power transmission equipment, your nearby Wagner Sales Engineer will be glad to help you select the right drive for your applications. There are Wagner Branches in 32 principal cities.

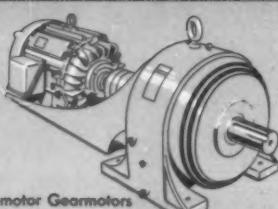
### Wagner Electric Corporation

6400 PLYMOUTH AVENUE, ST. LOUIS 14, MISSOURI

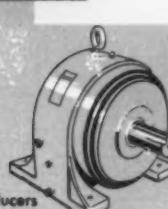
#### WAGNER SPEED REDUCTION EQUIPMENT



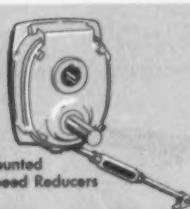
Integral-Type Gearmotors



All-motor Gearmotors



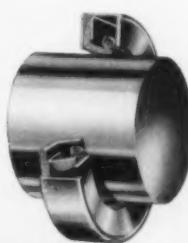
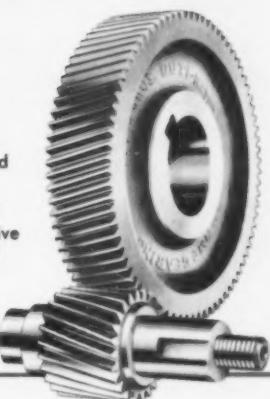
Speed Reducers



Shaft-mounted  
Speed Reducers

#### Heat treated high capacity helical gears

Gears are hardened after cutting, for maximum hardness and accuracy, to give extra capacity and longer wear life.



#### Positive Oil Seals

Improved lip type seals are used on horizontal shafts. On vertical output shafts, double mechanical seal with slinger and drain-off gives positive protection against leakage.

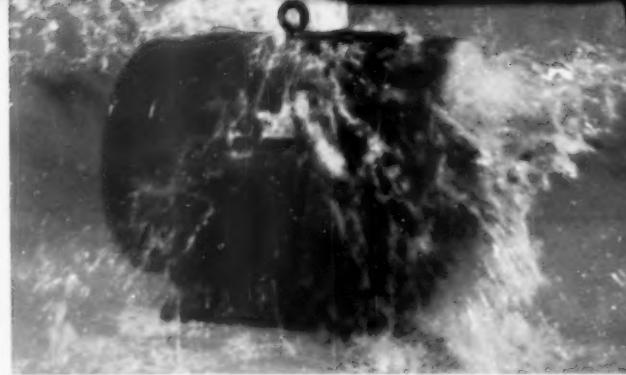
**DOUBLY PROTECTED.** Air intakes and outlets protect against falling or splashing liquids. Cast iron frames protect against rough handling and corrosion.



1 TO 125 HORSEPOWER - 1750 RPM - 40° C - NEMA FRAMES 182 THROUGH 445U

### **TYPE DP · Doubly Protected against corrosion · against falling or splashing liquids**

These motors give the double protection of corrosion-resistant cast iron frames and dripproof enclosures that are so well designed that they can be used in many applications that formerly required splashproof motors. Available with ball bearings, or with high load carrying capacity sleeve bearings for extra quiet operation. Write for Bulletin MU-223.



## **You get less downtime, lower upkeep, with WAGNER PROTECTED-TYPE MOTORS**

If you need motors that will keep production rates up . . . that will give you the continuity of service you want . . . that will operate with complete dependability under the most severe conditions in their specific applications—use Wagner Protected-Type Motors. These motors pack extra power into little space, are light in weight, and are easy to maintain.

Let your Wagner Sales Engineer show you how these protected motors can bring you savings in initial motor costs, maintenance costs, and in continuity of operation.

**Wagner Electric Corporation**  
6400 PLYMOUTH AVENUE, ST. LOUIS 14, MO., U.S.A.

WM59-10

1 TO 100 HORSEPOWER - 4 POLE - 60 CYCLE - NEMA FRAMES 182 THROUGH 445U

### **TYPE EP · Extra Protected against corrosive or abrasive elements**

Wagner Type EP Motors are totally-enclosed, fan-cooled—for complete protection against dust, abrasives, fumes, steel chips or filings. Type JP is explosion proof as well—designed and approved for use in explosive atmospheres. Cast iron frames protect against corrosion and ribs on the frames add mechanical strength and increase the surface cooling area. Effective cooling system adds to motor life. Write for Bulletin MU-224.



**SECURELY SEALED FOR LOW MAINTENANCE.** Both ends of these motors have running shaft seals to keep the heavy duty bearings clean. Bearing housings are effectively sealed to prevent escape of grease. Openings are provided to permit relubrication that adds years to motor life under severe conditions.

IF ALL THE STEEL  
SUPPLIED BY STEEL SERVICE CENTERS  
SUDDENLY STOPPED FLOWING,  
INDUSTRIES IN EVERY TOWN  
WOULD GRIND TO QUICK HALT!  
  
BUT, FORTUNATELY, ALL THIS STEEL FLOWS STEADILY --  
IN ADVANCE OF PRODUCTION NEEDS --  
FROM A COAST TO COAST NETWORK  
OF STEEL SERVICE CENTERS.

DELIVERING STEEL WHEN YOU WANT IT  
IS JUST ONE OF THE MANY SERVICES  
OF YOUR LOCAL STEEL SERVICE CENTER.

BETHLEHEM STEEL COMPANY, BETHLEHEM, PA.

Bethlehem Pacific Coast Steel Corporation,  
San Francisco

**BETHLEHEM STEEL**





## Speed work, cut costs with B&D accessories

Every job goes faster when you use the right tool . . . and the accessories built for that tool.



WIRE WHEEL  
BRUSHES



VIBRO  
PILOTS



POLISHING  
BONNETS



HOLE SAWS

SCREW  
DRIVER  
BITS

With over 2,000 accessories in the line, you're *always* right when you buy B&D because Black & Decker has the *right one* for every application.

So remember . . . whether your need is hammer tools, screw-driver bits, wire wheel brushes, grinding wheels, polishing pads or any other accessory for a Black & Decker tool . . . call your local Black & Decker Distributor. He stocks 'em all.

INSIST ON THE BEST

**Black & Decker**

ACCESSORIES DESIGNED FOR THE TOOL

## Products

### Longer Life For Abrasive Discs



New coated abrasive discs for all metals, wood and ceramics have been introduced by Abrasives Company of America, 492 Main St., Fort Lee, New Jersey. Produced by a patented process, the discs are said to have longer life, 2 to 4 times greater particle density, and more efficient cutting because new production process keeps the sharpest edges of the abrasive particles always exposed. Discs are available in standard grits for all normal grinding and finishing operations and come in two sizes, 7" and 9-1/8" diameter, with either 1/2" or 7/8" hole.

Write No. 23 on Inquiry Card—Page 32

### “Rubber” Works Without Vulcanizing

A new rubbery plastic material that snaps back like rubber yet, unlike rubber, works without vulcanizing is announced by the B. F. Goodrich Company's Research Center, Brecksville, Ohio.

Known as Estane VC, the tough, resilient, *unvulcanized* material, resists tearing and the effects of abrasion, solvents, oil and ozone—unique properties for any rubbery material. (Other rubbers, both natural and synthetic, before they undergo the costly, time-consuming process of vulcanization, have few of the qualities which later make them useful.)

Estane VC when deposited in film form from a solvent has a tensile strength of 7000 to 8000 pounds per square inch. Surprisingly, this film may be redissolved in the specific solvent and redeposited in the form of another film with equal properties. No

other known rubbery material has this unique property. The Patent Office has granted The B. F. Goodrich Company a patent on the material.

Write No. 24 on Inquiry Card—Page 32

### Test Samples of Safety Markers



A free test kit of traffic safety markings can be had by writing to J. W. Neff Laboratories, Inc., Stockertown 4, Pa. Sample kit includes one-foot sample of six-inch plastic safety trip, a 3-ounce can of quick-setting adhesive, plus complete application instructions. The plastic safety markings are for municipal, industrial and commercial use, and stay bright and visible despite heaviest traffic beatings, eliminating repeated cost of repainting.

Write No. 25 on Inquiry Card—Page 32

### Two Specialties For Masonry Painting

The Barreled Sunlight Paint Co., P.O. Box 1365, Providence 1, Rhode Island, has two new masonry specialties. Granolith 73-8 Surface Sealer bonds chalky surfaces so that finish coat will adhere, seals porous concrete, stucco, cement block, or other masonry, and can be brush or spray applied. Granolith 73-9 Block Filler is heavy-duty, water resistant emulsion material for filling and waterproofing porous masonry. Especially recommended for coarse textured blocks, it requires no pre- or after-wetting. If it is spray applied, the process must be finished by brush. Both products available in five and one gallon packages.

Write No. 26 on Inquiry Card—Page 32

For More Information Write No. 215  
on Inquiry Card—Page 32→

PURCHASING

**ROUT IT...**

**PLANE IT...**

New B&D Power Plane

B&D 1 H. P. Max. Heavy-Duty Router

**SAND IT...**

New B&D Belt Sander

**You get a faster job with these new  
Black & Decker woodworking tools!**

Where accuracy of cut, speed of work and powerful performance are a must—Black & Decker woodworking tools fill the bill.

**ROUT IT...** with the B&D 1 H.P. (Max.) Heavy-Duty Router . . . the lightest, most compact full-powered router on the market. **PLANE IT...** with the new B&D 1 H.P. (Max.) Power Plane . . . built and powered for continuous duty on the toughest jobs. **SAND IT...** with a B&D Belt Sander . . . the only truly *dustless* sander on the market.

Whatever your woodworking job—your B&D Distributor has the tool you need. Write today for full information.

YOU  
GET A  
Better  
Value  
FROM

**Black & Decker**  
Quality Electric Tools

Look Under  
TOOLS-ELECTRIC  
in Yellow Pages

THE BLACK & DECKER MFG. CO.  
Dept. 1705, Towson 4, Md.

Please arrange a demonstration of . . .  
 Please send me information on . . .

Name . . . . . Title . . . . .

Company . . . . .

Address . . . . .

City . . . . . Zone . . . . . State . . . . .



Drills



Vacuum Cleaners



Sander-Grinders



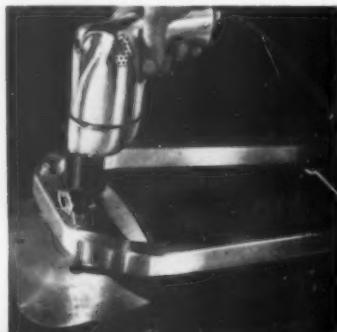
Bench Grinders

**FASTEST CUTTING** Finishing Sander on the market; No. 88. H.D. Sander leaves no swirl marks—sand with, against, across the grain.

**CUTS INTRICATE PATTERNS—** Heavy-Duty Jig Saw combines a sabre saw, rip, cross-cut, coping, hand, hack and keyhole. 2" capacity at 90°.

**NO. 83 H. D. SAW** cuts accurately, faster, yet runs cooler! This versatile, completely heavy-duty saw's perfect for all-around use.

**NO. 10 SCRUGUN®** drives screws faster; handles up to #12 screws. Positive or adjustable clutch; centerdrive, end handle or pistol grip.





*the TRS Process that employs standard and multi-head machines to make riveting practically a new fastening method!*

### **PAR . . . Production Automated Riveting**

Perfected for over 3 years . . . proved successful in some of industry's most efficient plants . . . the TRS PAR Process opens the way to new economies for 7 out of 10 assemblers of metal products.

Through TRS Production Automated Riveting, costly manual handling of parts on the machine and between machines may be much reduced. Operations may be performed in multiple, simultaneously. Rate of fastening may be speeded up to an unheard-of point. Machine down-time and rejects cut to a negligible amount.

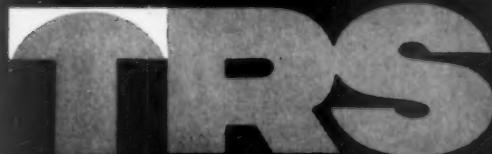
**Automation of Assembly Operations becomes a reality through efficiently integrated and automatic . . .**

1. FEEDING of tubular rivets or related products.
2. TRANSFER of parts to — or between — riveter stations.
3. SEQUENCING from 3 to 15 rivet setters to operate simultaneously or in any desired order.
4. CONTROL of setting force as required by parts thickness or material characteristics.
5. SENSING of improper conditions and stopping equipment to avoid injury to parts, equipment, or operator.
6. EJECTION of parts as required.

### **WHY only TRS Can Offer the PAR Process . . .**

Obviously, there are two vital elements in the PAR process. Essential is the special knowledge and experience acquired by TRS engineers through the design, tooling and application of many Multi-Head Riveters for complicated production requirements. TRS originated Multi-Head Riveters over three years ago

and is the only experienced source of these machines. Equally important, and partly resulting from this unique TRS experience, is superior knowledge of how to design an efficient system of riveters, feeders, transfers and controls . . . whether with standard riveting machines or Multi-Head Riveters.



**TUBULAR RIVET & STUD COMPANY**

Quincy 70, Mass.

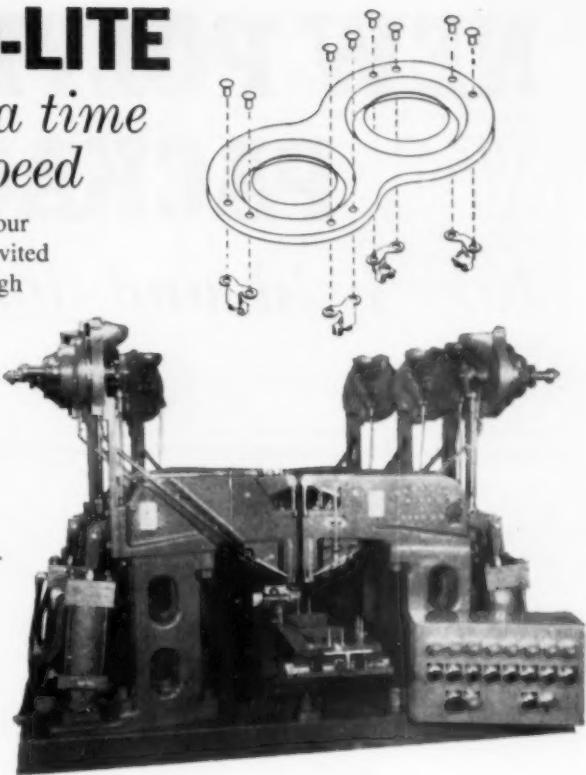
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WAREHOUSE IN CHICAGO

See "Yellow Pages" for phone numbers

# ELECTRIC AUTO-LITE

## *attaches 4 brackets at a time with push-button speed*

Dual headlight frames required the attachment of four angle brackets with eight rivets. Electric Auto-Lite invited TRS engineers to help develop a way to do it at high speed, with a minimum of manual handling. The solution is shown here . . . an ingeniously engineered TRS multi-head riveting set-up of eight independent air-powered machines working on very close centers, and a sliding loading fixture containing eight anvils. The operator need only load the frame and brackets, slide the loaded fixture into riveting position and press a button. All eight rivets are set simultaneously. A hold-down attachment on the loading fixture keeps the workpiece in position until released by the operator. A push-button panel permits independent cycling of any one or any combination of riveters if desired. An important feature of the set-up is in the relative simplicity of rearranging the machines as needed to accommodate a future change in parts design.

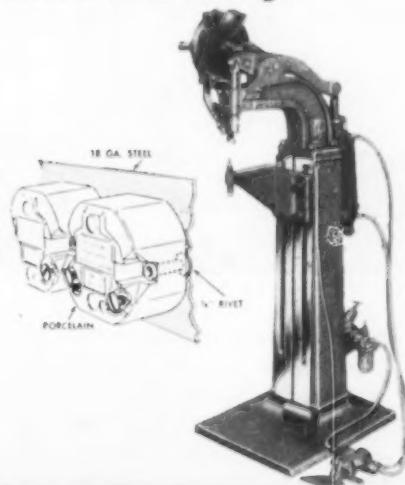


*... and LIBERTY ELECTRIC rivets porcelain switches with a standard machine, 1/6 of the labor, and no breakage*

Nut-and-bolt assembly of porcelain-base switches on an electric stove was slow, used relatively expensive fasteners. Automatic riveting would be far faster and cheaper — but how to avoid breaking the switches under the force of the setting? The TRS man had the answer: an air-powered long-stroke modification of a standard TRS riveter, adjustable for "cushioned" setting of the right size of cad-plated semi-tubular rivets. Results: Savings of  $\frac{5}{6}$  of the labor, savings in fastener cost per unit, higher uniformity of product, and no breakage.

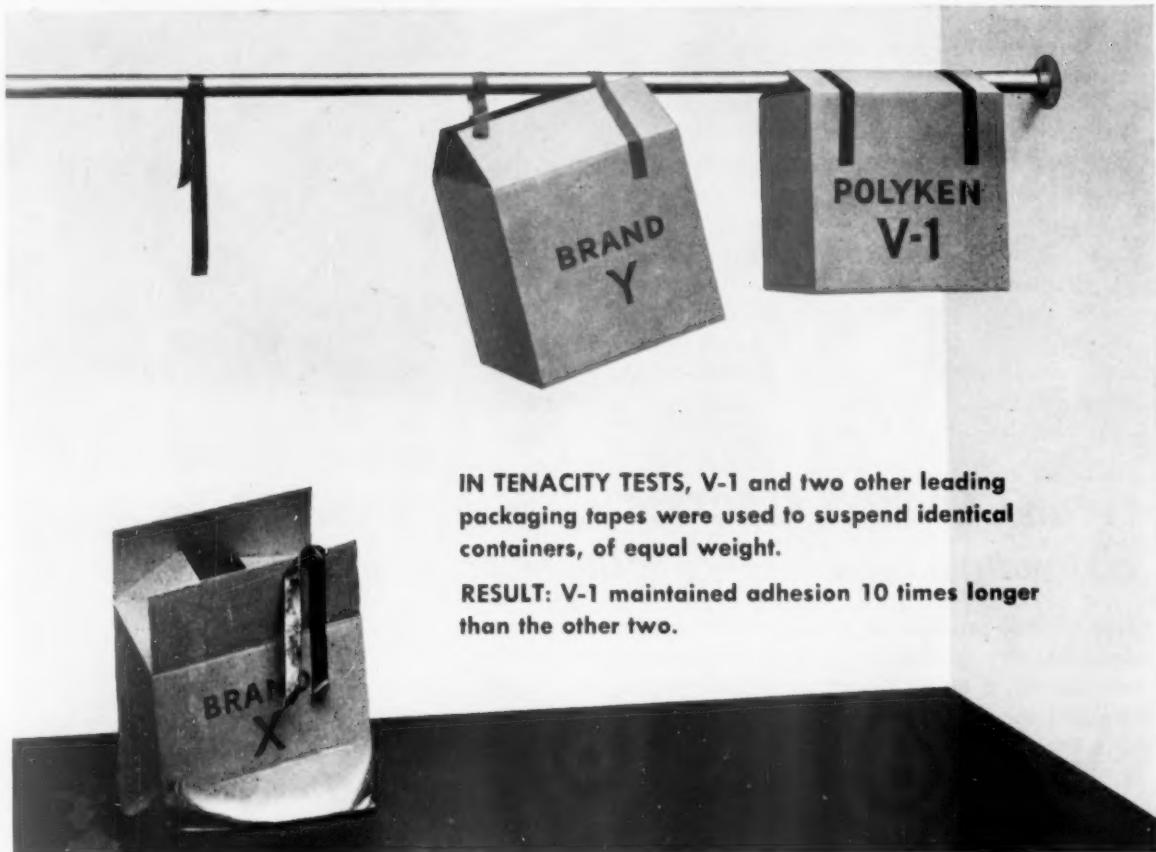
### ASK to see more Case Studies . . .

... if your product can be riveted, and especially if several rivets are involved, phone or write that you want to see the detailed exhibit of the way many plants, large and small, use the TRS PAR Process.



# NEW POLYKEN V-1 PACKAGING TAPES

*take hold—and don't let go!*



IN TENACITY TESTS, V-1 and two other leading packaging tapes were used to suspend identical containers, of equal weight.

RESULT: V-1 maintained adhesion 10 times longer than the other two.

Holding power counts heavily in modern packaging tapes. With the new V-1 adhesive mass, Polyken's improved tape line has the tenacity that will take the toughest treatment. You also get better heat stability, along with greater resistance to staining.

You'll be glad to know, too, that now all Polyken tapes can be assorted for quantity discounts.

Ask your Polyken Representative about V-1 packaging tape. Polyken Representatives are the industry's best trained technicians in the use and application of industrial tapes. They are ready to help you.

Check with the Polyken Industrial Distributor nearest you. Look in the phone book under "Tapes" or write to Polyken Sales Division, 309 W. Jackson Blvd., Chicago 6, Illinois. (In Canada, write Polyken, Curity Ave., Toronto.)



## Polyken®

INDUSTRIAL TAPES

THE KENDALL COMPANY

Polyken Sales Division

INDUSTRIAL TAPES • PROTECTIVE COATINGS • PLASTIC FILMS

THE MODERN TOOL... AT WORK FOR MODERN INDUSTRY

For More Information Write No. 217 on Inquiry Card—Page 32

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Pine Bluff..... Smith Paper Products Co.

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Indianapolis..... Duo-Fast of Indiana  
Indianapolis..... Orlon Paper Co., Inc.  
South Bend 24..... Valley Paper Co. Div. of  
South Bend 24..... Schwarz Paper Co.

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Garden City, L.I. .... Hogan Industrial Supply Corp.  
Elmira..... Weight Supply Co.  
Elmira Heights..... The Waller Supply Co.  
Jamaica..... Pacific Supply Co.  
Long Island City..... Viking-Criterion Paper Corp.  
New York..... Coy Distrib., Div. of W. H. Smith & Sons, Inc.  
New York..... Geo. W. Miller & Co., Inc.  
New York..... Robert Spector Co.  
New York..... Westwood Paper Co., Inc.  
Rochester..... The Mill Andrews Paper Co.  
Syracuse..... Allied Products  
Troy..... Sperry Supply Corp.  
Utica..... Smyth-Despard Co.

### NORTH CAROLINA

Charlotte..... Dillard Paper Co.  
Greensboro..... Dillard Paper Co.  
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### OHIO

Cincinnati..... The Chaffield Paper Corp.  
Cleveland..... The Central Ohio Paper Co.  
Cleveland..... Gascon Paper Co.  
Cleveland..... Union Paper & Twine Co.  
Columbus..... The Cincinnati Cordage & Paper Co.  
Dayton..... Reliable Rubber Products Co.  
Hopedale..... Federal Paper Co.  
Toledo..... The Ohio & Michigan Paper Co.  
Youngstown..... The Hear Paper Co.

### OKLAHOMA

Oklahoma City..... C. B. Anderson Co.  
Oklahoma City..... Service Paper, Inc.  
Tulsa..... C. B. Anderson Electric Co.  
Tulsa..... Industrial Equipment Co.  
Tulsa..... Tulsa Paper Co.

### OREGON

Portland..... Western Fibrous Glass Products  
Portland..... General Rubber & Supply Co.

### PENNSYLVANIA

Hershey..... Hershey Paper Co.  
Johnstown..... Morris Paper Co.  
Lancaster..... United Twine & Paper Co.  
Philadelphia..... The Chaffield Paper Co.  
Philadelphia..... Frank W. Wenne & Son, Inc.  
Pittsburgh..... The Chaffield & Woods Co.  
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Grand Prairie..... C. P. Waggoner Sales Co., Inc.  
Houston..... Frank W. Wenne & Son, Inc.

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Salt Lake City..... J. B. Tile Co.

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Norfolk..... Empire Machinery & Supply Co.  
Norfolk..... J. Henry Holland Corp.  
Richmond..... Industrial Supply Corp.  
Roanoke..... Dillard Paper Co.

### WASHINGTON

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Seattle..... Western Fibrous Glass Products  
Spokane..... Zellerbach Paper Co.

### WISCONSIN

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Madison..... Scherer Paper Co.  
Milwaukee..... F. D. Moyer Co.  
Milwaukee..... Redi-Products Company  
Milwaukee..... Reliable Paper Co., Inc.  
Milwaukee..... Sawyer Paper Co.

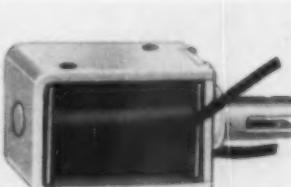
### HAWAII

Honolulu..... Chapman Bros. Ltd.  
Honolulu..... The Thom Co., Inc.

**Polyken**  
INDUSTRIAL TAPES

## Products

### Power, Small Size In Midget Solenoid



The Guardian Electric Mfg. Co., 1621 W. Walnut St., Chicago 12, Illinois, announces its No. 22 D.C. Midget Solenoid for continuous and intermittent duty applications. For use in miniaturized assemblies, unit combines power capacity with small size. Plunger strokes adjustable 1/32" to 5/16" with a maximum lift of 11 ounces, continuous duty and 24 ounces, intermittent duty. Overall dimensions: 3/4" high x 1-1/8" long x 3/4" wide. Shipping weight: approximately 2.5 ounces. Coil values range from 6 to 110 volts, D.C. only.

Write No. 27 on Inquiry Card—Page 32

### New Allis-Chalmers 2000 Pound Lift Truck

A pneumatic-tired 2000 lb. capacity lift truck has been announced by Allis-Chalmers Manufacturing Co., Milwaukee, Wisc. The new model FTP 20-24 is powered by a 4-cylinder engine, available either in gasoline or LP fuel model, both delivering 35 brake horsepower at 2400 rpm. Two-speed constant mesh transmission is standard equipment; power-shift torque converter drive is optional. Maximum stacking height is 131-1/4", with an over-all lowered height of 83 in. and a 16-1/4 in. free lift. Ideal for confined quarters, the FTP 20-24 has an over-all width of 36-1/2 in., outside turning radius of 70 in., and center point steering for minimum radius turns in either direction. Many mechanical and hydraulically operated attachments available, including load back rests and overhead guards.

Write No. 28 on Inquiry Card—Page 32



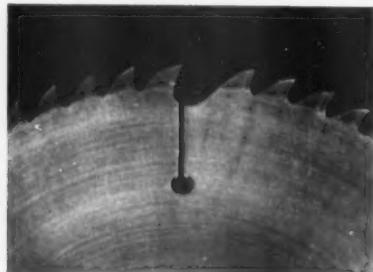
**DISSTON-PORTER** S-2403-0  
SUPER SAFE • HIGH SPEED STEEL  
U. S. A.

## DISSTON HAS THE EDGE®

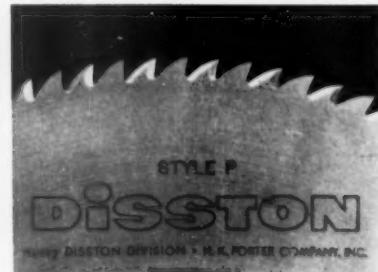
**in quality at the tooth edge where the work is done** Right down on the business end of the saw is where Disston quality shows up best. Disston saw teeth have extra quality engineered and crafted in their bite. And these teeth are supported by tough, resilient backs. That's why Disston saws produce better work faster and cleaner—and they last longer, too. See your distributor, or write to *H. K. Porter Company, Inc., Disston Division, 00 Tacony, Philadelphia 35, Pa. In Canada, Box 530, Acton, Ontario.*



**Hard Edge Flexible Back Band Saws.** *Lancer tooth* is specially designed with a 10 degree positive hook and uniformity of set to enable each tooth to produce a fully formed chip. This permits smooth, economical, high-speed production cutting of non-ferrous metal, plastic, and wood. *Regular pattern teeth* supplied in both Raker and Group set to meet all cutting requirements. Available from stock in full line of widths and tooth spacings.



**Carbide Tipped Saws.** These outstanding saws are precision-crafted by Disston to maintain their keen cutting edges 30 to 50 times longer than ordinary steel saws. The carbide tips are brazed under the most rigid controls to insure maximum strength. Packaged in special protective reusable containers to insure safe shipment and storage. Made in all popular styles and sizes to fill the needs of the wood, plastic, and metal cutting trades.



**Style "P" Smooth Trimmer Saw.** Eliminates sanding. Butt joints come out absolutely accurate . . . perfectly flat, without tearouts or splintering. When you join them, they fit precisely. Excellent for double-end tenon work, also where 1/20" veneer is laminated to core, and for trimming lumber to size. Has four gauges of hollow ground to eliminate heat during cutting. From 8 to 30 inches in diameter.

**DISSTON DIVISION**

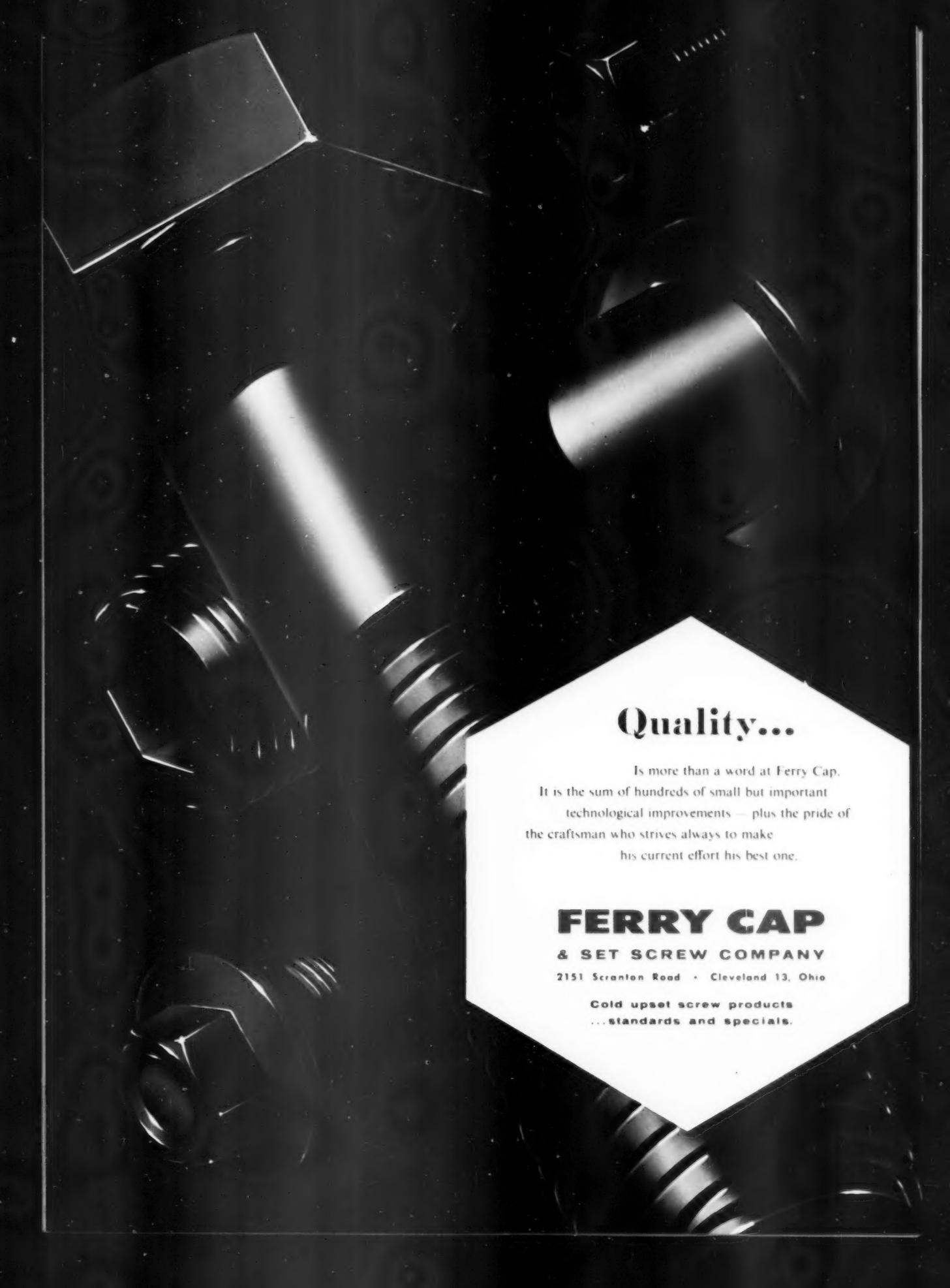
**PORTER**

**H.K. PORTER COMPANY, INC.**

**PORTR SERVES INDUSTRY:** with Rubber and Friction Products—THERMOID DIVISION; Electrical Equipment—DELTA-STAR ELECTRIC DIVISION, NATIONAL ELECTRIC DIVISION, Copper and Alloys—RIVERSIDE-ALLOY METAL DIVISION, Refractories—REFRACTORIES DIVISION, Electric Furnace Steel—CONNORS STEEL DIVISION, VULCAN-KIDD STEEL DIVISION; Fabricated Products—DISSTON DIVISION, FORGE AND FITTINGS DIVISION, LESCHEN WIRE ROPE DIVISION, MOULDINGS DIVISION; and in Canada, Refractories, "Disston" Tools, "Federal" Wires and Cables, "Nepco" Systems—H. K. PORTER COMPANY, CANADA LTD.

For More Information Write No. 218 on Inquiry Card—Page 32

For More Information Write No. 219 on Inquiry Card—Page 32→



## Quality...

Is more than a word at Ferry Cap.  
It is the sum of hundreds of small but important  
technological improvements — plus the pride of  
the craftsman who strives always to make  
his current effort his best one.

## **FERRY CAP**

**& SET SCREW COMPANY**

2151 Scranton Road • Cleveland 13, Ohio

**Cold upset screw products  
...standards and specials.**



use Airco's new Dip Transfer<sup>†</sup> CO<sub>2</sub> Process<sup>\*\*</sup>  
**for ALL-POSITION WELDING OF  
 STEEL IN ALL THICKNESSES**

low costs • easy fit up • high speed • very low spatter • no warpage

In welding mild sheet steel manually, there's only one way to reduce costs and produce high quality welds at the same time. Airco Dip Transfer CO<sub>2</sub> Process Welding. Let's be specific:

- The complete Airco Dip Transfer CO<sub>2</sub> package welds in all positions... manually!
- Welds are hydrogen-free.
- Virtually ends warpage — only low average currents are used for burn off.
- Creates little or no spatter.
- Handles typical steel joint fit ups.

- No flux needed.
- Penetrates deeply — critical for high quality.
- Welds much faster than flux-based processes.
- Uses money-saving Pureco CO<sub>2</sub> as shielding gas.
- The basic equipment welds all weldable metals.

The Airco Dip Transfer CO<sub>2</sub> Process gives you consistently *high quality* welds at *lower costs* than any other process. For complete information, phone or write your nearest Air Reduction Representative. Ask for the new 24-page "AIRCOMATIC CO<sub>2</sub> WELDING" Catalog.

Pureco CO<sub>2</sub> is supplied by the Pure Carbonic Company, a division of Air Reduction Company, Incorporated.  
 ®Trademark

\*\*Patent Applied For



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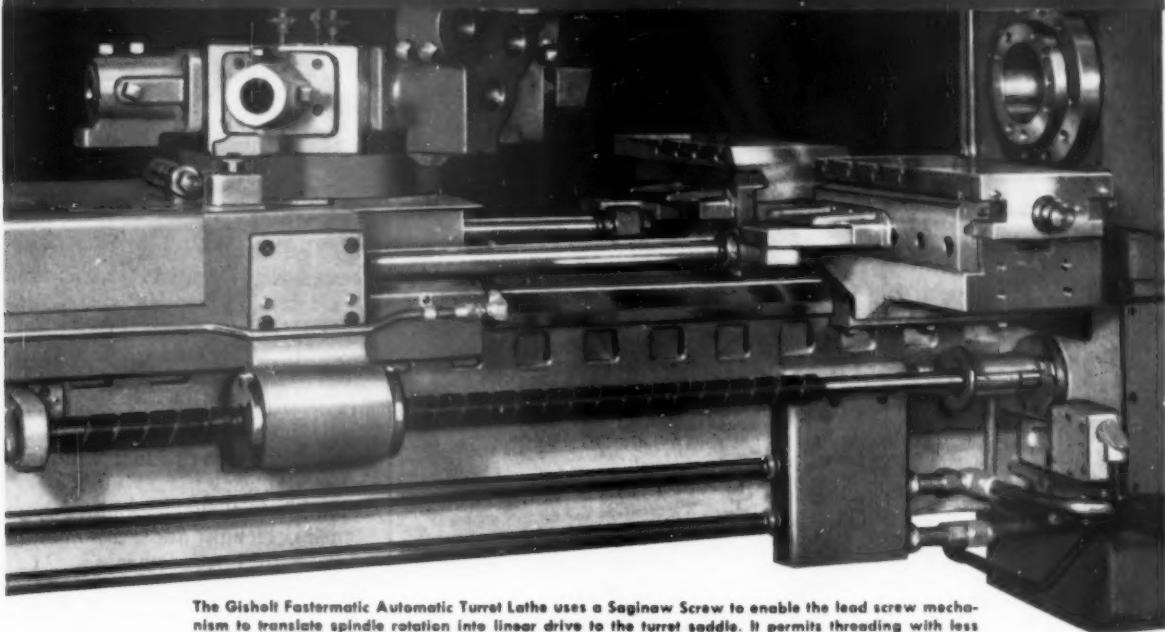
In Cuba—  
 Cuban Air Products Corporation

In Canada—  
 Air Reduction Canada Limited  
 All divisions or subsidiaries  
 of Air Reduction Company, Inc.

For More Information Write No. 220 on Inquiry Card—Page 3

GISHOLT CO.

# CUTS PRODUCTION COSTS WITH THE Saginaw b/b Screw



The Gisholt Fastermatic Automatic Turret Lathe uses a Saginaw Screw to enable the lead screw mechanism to translate spindle rotation into linear drive to the turret saddle. It permits threading with less horsepower and greater accuracy than would be possible with a machine cut thread on the lead screw.

"BECAUSE CRITICAL PRECISION IS BUILT INTO EVERY SAGINAW SCREW, it's saved us money by cutting out an extra production cost on the threading attachment of our Fastermatic Automatic Turret Lathe. Without the Saginaw Ball Bearing Screw we would have to pay a considerable premium for acme screws machined to less than standard limits. Now the Saginaw Screw gives our product greater accuracy and longer life with less friction . . . and much greater Sales Appeal as well," says Mr. A. A. Ebel, Advertising

Manager, Gisholt Machine Company, Madison, Wisconsin.

The Saginaw Ball Bearing Screw converts rotary motion into linear motion with over 90% efficiency. So save time, power, weight, space and cost by switching to these versatile Saginaw Screws.

Perhaps the Saginaw Screw can give your products that greater Sales Appeal you're looking for. For the detailed story, write or telephone Saginaw Steering Gear Division, General Motors Corporation, Saginaw, Michigan—world's largest producers of b/b screws and splines.



Give your products  
NEW SALES APPEAL...  
switch to the



Saginaw

b/b  
bearing  
Screw

WORLD'S MOST EFFICIENT ACTUATION DEVICE

*Now! A higher reliability factor in printed circuits*



## ALTORI

a new and distinctively different  
finish on TAYLOR copper-clad  
laminates that accepts all  
acid resists uniformly



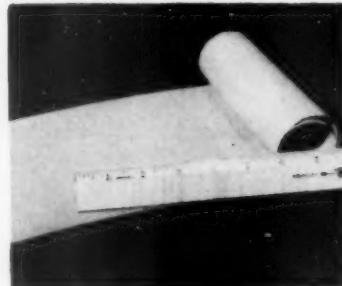
Something new and distinctively different has been added to TAYLOR copper-clad laminates — a finish that accepts all types of acid resists uniformly. High fidelity in printed circuit reproduction is assured. Circuits can be of consistently higher quality and reliability, no matter how critical the design. For complete details about TAYLOR copper-clad laminates and samples, write TAYLOR FIBRE CO., Norristown 36, Pa.

# Taylor

LAMINATED PLASTICS    VULCANIZED FIBRE  
For More Information Write No. 221 on Inquiry Card—Page 32

## Products

### New Impregnated Glass Cloth



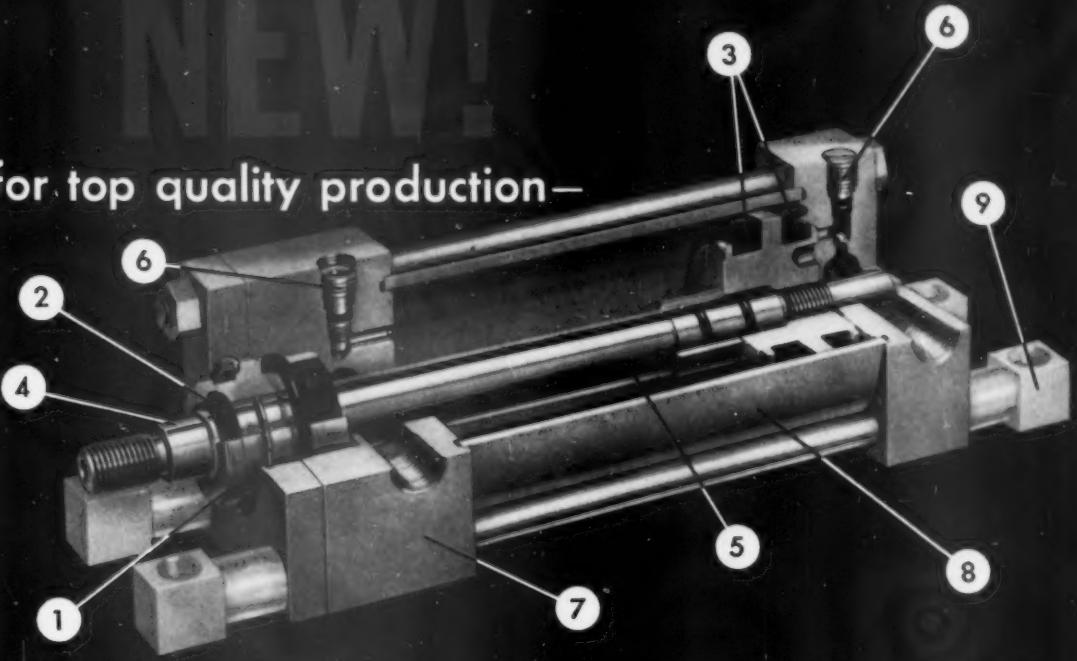
A new grade of laminated plastic made from glass cloth impregnated with Du Pont-trademarked Teflon resin is available from Continental-Diamond Fibre Corp., Newark, Delaware. Dilecto GB-108TED is designed for corrosive applications such as gaskets and seals and for flexible electrical insulation such as radar windows, printed circuits, and tape cable. Flexible material combines high tensile strength and resistance to flow with low permeability, excellent chemical resistance, and superior electrical properties. Offered as continuous, natural-color, smooth-finish sheet in coils, in 0.009 in. standard thickness (with tolerances of plus or minus 0.0005 in.). Thicknesses of 0.008 in. and 0.007 in. can also be supplied. Maximum width available is 6 in., maximum length 75 feet. One or both sides cementable if desired, and other sizes on special order.

Write No. 29 on Inquiry Card—Page 32



*"I suppose this means you need another rush shipment!"*

for top quality production—



1. Bronze Bearing, with self-adjusting "U" Cup Piston Rod Seal for longer wear.
2. Rod Wiper protects Piston Rod Seal and keeps Cylinder clean.
3. "U" Cup Seals expand with pressure to provide positive seal with minimum friction.
4. Wrench Flats make for easy installation.
5. Ground, hard chrome-plated Piston Rods have minimum yield strength of 125,000 psi.
6. Self-locking cushion adjusting screw and ball check are below surface for protection . . . easily accessible.
7. For extra strength, Cylinder Ends and Mounting Plates are machined from bar stock and steel forgings.
8. Cylinder is precision-finished brass for extra heavy duty.
9. Variety of mountings can be interchanged—easily match any installation requirement.
10. Interchangeable with all JIC Cylinders.

## SCHRADER SQUARE-END CYLINDERS

meet and exceed JIC specs . . . 250 psi air . . . 750 psi hydraulic!

Here's compact, versatile straight-line power. Just look at the features!

Use Schrader's new square-end double-acting cylinders for holding, positioning, moving work—for push, pull or lifting—for automating manual operations. In five sizes up to 4-inch bore, and with five interchangeable mountings, these "square-ends" are economical and versatile. Bolt, leg, flush, side flush or base . . . each JIC Cylinder will mount all five ways. Suitable for air

pressures to 250 psi, or hydraulically to 750 psi—available cushioned or non-cushioned.

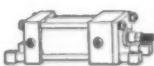
You get safe, controlled, low-cost power with Schrader "square-ends"—another addition to the line of famous Schrader quality Air Control Products.

Complete stocks available locally—expert help to improve your air control hookups. Write for your complete specifications and data on these new "square-ends."

Bolt Mounting



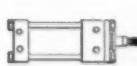
Leg Mounting



Flush Mounting



Side-Flush Mounting



Base Mounting



**Schrader**  
a division of **SCOVILL**

A. SCHRADER'S SON  
Division of Scovill Manufacturing Co.  
473 Vanderbilt Avenue, Brooklyn 38, N. Y.

QUALITY AIR CONTROL PRODUCTS

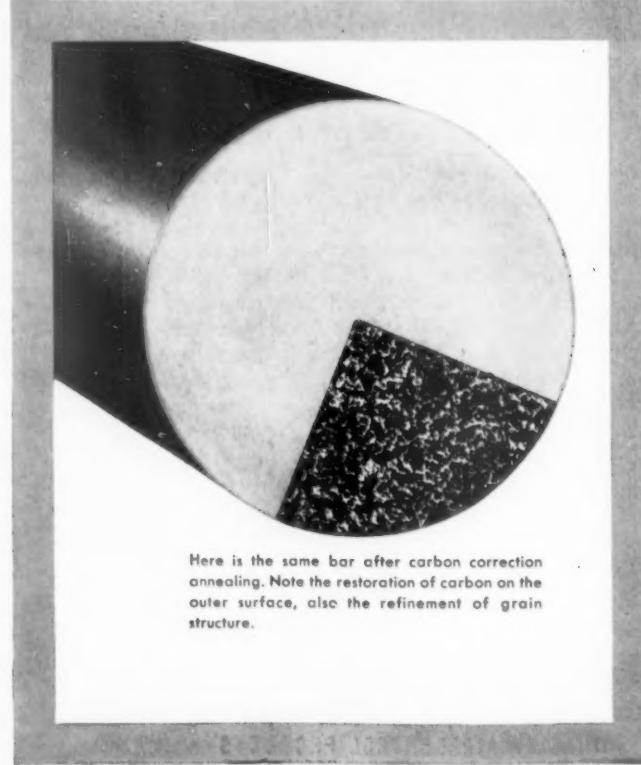
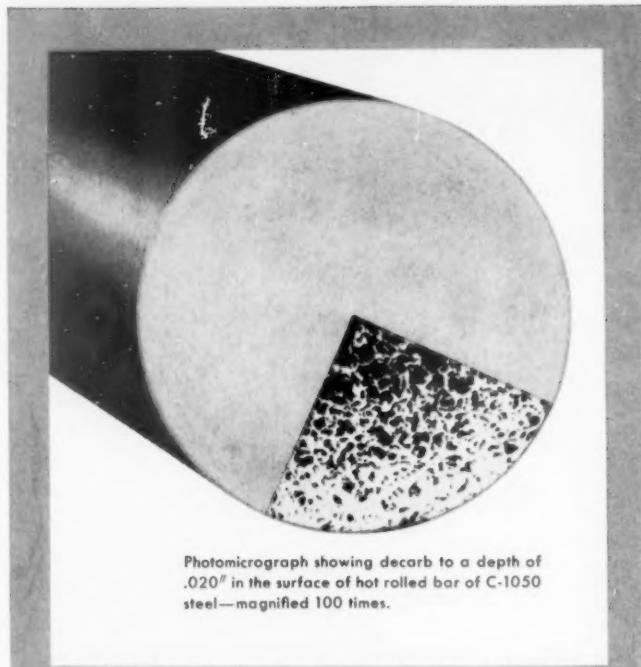
For More Information Write No. 222 on Inquiry Card—Page 32

MAY 11, 1959

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# Republic Cold Drawn Carbon Corrected Bars

## REDUCE YOUR COSTS 3 WAYS!



1. You save both metal and money by eliminating waste. Republic Carbon Corrected Bars eliminate the extra preparation of machining or grinding away the surface of the bars to remove decarb.
2. You eliminate the need for buying bars oversize to allow for decarb removal to depths of 20 thousandths of an inch or more.
3. You get better MACHINABILITY.

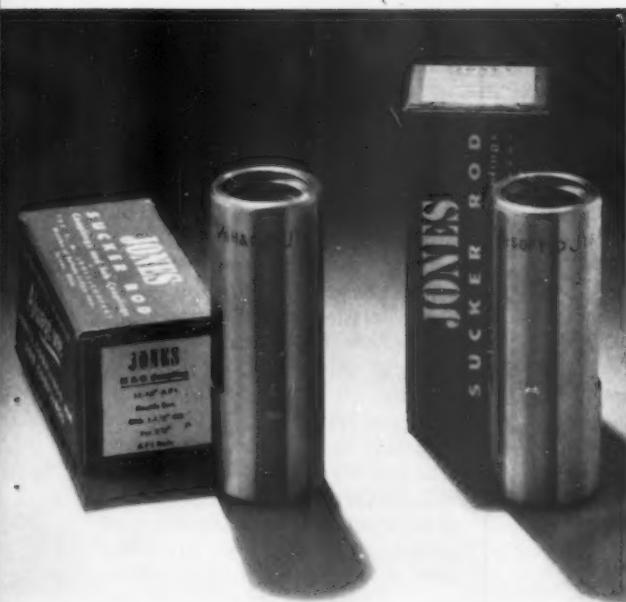
Carbon correction is the restoration of all the carbon lost from the bar surface through decarburization during hot rolling. The lost carbon is restored right out to the surface of the bar by annealing in a controlled carbon-rich atmosphere prior to cold drawing.

Another advantage of this process is the resulting refinement of grain structure as indicated in the photomicrographs.

Carbon Corrected Bars are ideally suited for your steel parts calling for high surface hardness—particularly those produced by high frequency induction heating.

To the advantages of carbon correction add the improved machinability produced by the cold drawing process. You can eliminate finishing operations by taking advantage of the full diameter of Republic Cold Finished Steel Bars. You can boost feeds and speeds with no sacrifice of tool life or finished surface quality. You can secure better product performance through the higher ultimate strength, yield point, and hardness of cold drawn steel.

Republic metallurgists and machining specialists are available to help you use Republic Cold Drawn Carbon Corrected Bars to best advantage. They are ready to help you raise production efficiency, lower unit cost, obtain better machinability. No obligation. Just mail the coupon.



**REASONABLE COST, GREAT STRENGTH, AND PRECISE TOLERANCE** are requirements met by Republic Cold Finished Alloy Steel Bars in the production of sucker rod couplings. The parts must also withstand enormous static and dynamic loads, to more than 40,000 psi. Alloy steels provide an outstanding combination of qualities essential to designing smaller sections to carry heavier loads safely. By adding the advantages of the cold finishing process, you have a material that offers strength, hardness, machinability, size, and cross-sectional accuracy, smooth bright surface, and close tolerance straightness. Send coupon for more information.

**REDUCE COSTS, IMPROVE QUALITY, INCREASE PRODUCTION** with Republic Cold Drawn Special Sections. Formed to the predominating cross-section of the part to be produced, special sections eliminate or greatly reduce required machining. Results are faster output and lower cost. Also, since cold drawing improves the physical properties of any given analysis, completed parts are stronger and longer wearing. Other advantages may include improved performance and simplified design. Send coupon for full facts.

**MACHINABILITY, SUPERIOR STRENGTH, AND CORROSION-RESISTANCE** are reasons for the use of Republic Cold Finished Stainless Steel Bars in parts such as outboard motor drive and propeller shafts. Republic's cold finished, free-machining stainless steel bars offer close tolerance, accuracy of section, uniform soundness, and fine surface finish. Two grades, A.I.S.I. Types 416 and 430-F are fully 90% as machinable as Bessemer screw stock. Republic also supplies ENDURO® Stainless Steel in hot rolled bars, special sections, and wire. For more facts, mail the coupon.



# REPUBLIC STEEL

*World's Widest Range  
of Standard Steels and  
Steel Products*



**REPUBLIC STEEL CORPORATION**  
**DEPT. PH -7486**  
**1441 REPUBLIC BUILDING • CLEVELAND 1, OHIO**

Please send more information on:

<input type="checkbox"/> Carbon Corrected Bars	<input type="checkbox"/> Special Sections
<input type="checkbox"/> Cold Finished Alloy	<input type="checkbox"/> Cold Finished Stainless Steel Bars

Name \_\_\_\_\_ Title \_\_\_\_\_

Company \_\_\_\_\_

Address \_\_\_\_\_

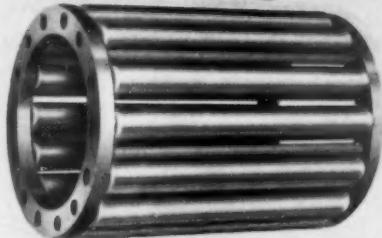
City \_\_\_\_\_ Zone \_\_\_\_\_ State \_\_\_\_\_

For More Information Write No. 223 on Inquiry Card—Page 32

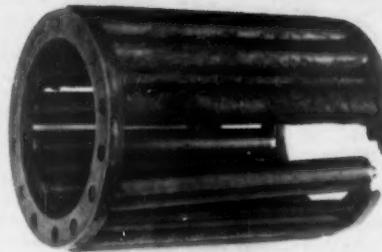
MAY 11, 1959

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## NOW! 1000°F. Lubrication with New Hi-Temp 2409



Houghton  
Hi-Temp 2409



Conventional  
High Temperature  
Petroleum Grease

Bearing failure due to caking of carbon, de-composed thickeners, gums and resins at high temperatures can be prevented by use of Houghton's new Hi-Temp 2409 grease!

Hi-Temp 2409 represents a completely new concept in high temperature lubrication. In this new grease, *the thickener provides the lubrication—not the fluid!* No silicones, diesters, soaps, heavy metals or solvents are used.

A clean-burning synthetic fluid is used as a carrier. The grease becomes fluid at 200°F. carrying the lubricant to all bearing surfaces. At 500°F. the synthetic carrier is completely evaporated and a soft film of dry lubricant remains on the bearing capable of withstanding temperatures well above 1000°F.!

If you have a high temperature lubrication problem, it will pay you to investigate this new grease—Hi-Temp 2409. Call your Houghton Man for a demonstration or write E. F. Houghton & Co., 303 W. Lehigh Ave., Philadelphia 33, Pa., for your copy of Houghton's new booklet on "Thermal Lubrication".

### HIGH TEMPERATURE LUBRICANTS

HI-TEMP 2409 GREASE  
HI-TEMP 100, 200, 300 SERIES OILS  
COSMOLUBE 101 and 102  
HOT FORGING AGENTS  
DIE CASTING LUBRICANTS  
PORCELAIN MOULD AIDS

products of . . .



For More Information Write No. 224 on Inquiry Card—Page 32

## Products

### Smaller Magnetic Motor Starter Introduced

A new NEMA Size 2 magnetic motor starter, 34% smaller than previous open forms and 14% smaller than previous enclosed forms, has been introduced by General Electric's General Purpose Control Department, Schenectady 5, N. Y.

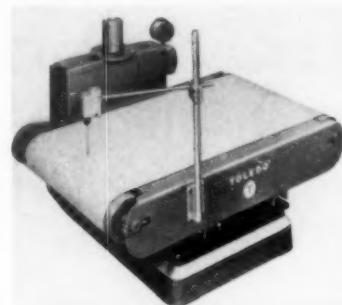
Rated 25 hp at 440/600 volts, the new unit includes a special arc trap to contain and quench arcs quickly and effectively.

Straight-through wiring and new pressure-type terminals save wiring time because no wires need to be bent or looped around the sides of the starter. All wiring can be done from the front of the unit. The new enclosed starter has 10 per cent more wiring space than the former design.

A 33 per cent smaller control transformer can be used with the new motor starter because the holding and inrush currents have been reduced. Manual or automatic reset of the overload relays can be obtained by moving the spring on the side of the overload from one slot to the other.

Write No. 30 on Inquiry Card—Page 32

### High Capacity Automatic Checkweigher



Eliminates short-weight items for customer good will; avoids over-weights for substantial savings; does away with methods that require manual labor—these are accomplishments of the Automatic Checkweigher, designed for items from 50 to 200 lbs. and manufactured by the Toledo Scale Corp., Toledo 12, Ohio. Accuracy, (Please turn to page 136)

For More Information Write No. 225  
on Inquiry Card—Page 32→



## Cocoanut Grove calls on Scott Washroom Advisory Service... free film shows how you, too, can reduce washroom costs

Scott's Washroom Advisory Service is offering free showings of a 14-minute film that gives tips on how to analyze washroom costs. It also shows how to modernize and increase the efficiency of existing facilities with a few simple changes.

Scott's Washroom Advisory Service is based on experience accumulated in close to a million business and industry washrooms. The service is free and entails no obligation. Send the coupon.



Scott recommendations included special lighting for make-up in the women's lounge adjoining the Cocoanut Grove.



Notice the soap dispensers over the washbowls—another Scott suggestion that saves soap, improves appearance and reduces maintenance time.

Mr. Philip J. Weber, vice president and general manager of the Ambassador Hotel of Los Angeles, called on Scott's Washroom Advisory Service when redecorating the hotel's famous Cocoanut Grove. Scott experts helped modernize the Ambassador's 36 public and employee washrooms.

**SCOTT PAPER COMPANY**  
Department P-95, Chester, Pennsylvania

- I'd like to see the Scott Washroom Film.
- Send me the free booklet containing tested and proved principles to follow when planning new washrooms or remodeling present facilities.

Name \_\_\_\_\_

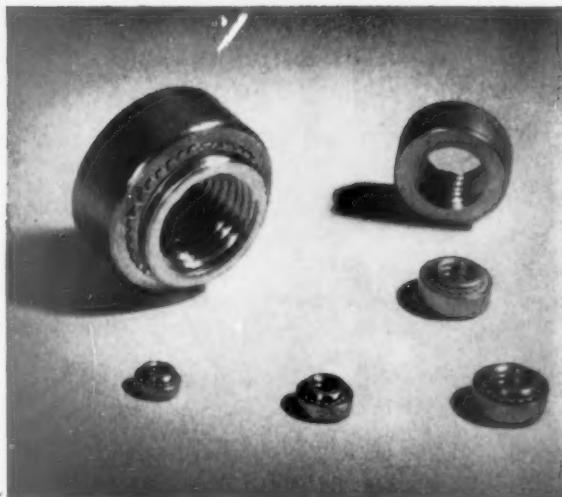
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Company \_\_\_\_\_

Address \_\_\_\_\_

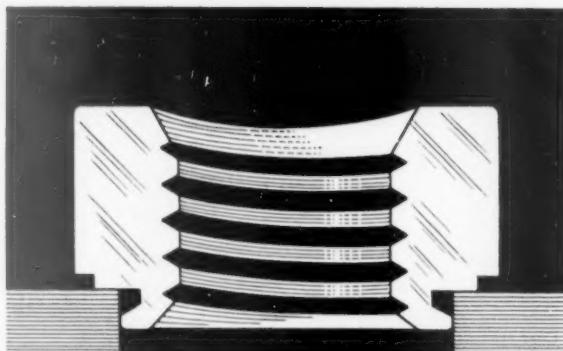
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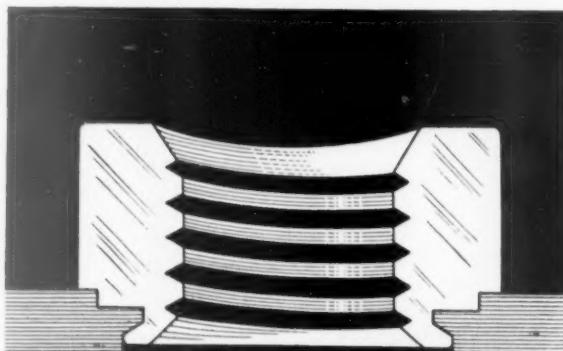


New SPS swage nuts are easily installed in steel and other sheet metals without use of clinching tools or special die fixtures. They provide handy tapped holes in thin-section assemblies, aid in blind fastening.

## SPS swage nuts offer new economies in fastening to sheet metal



Step 1. Shank of nut slips easily into hole, serves as a positioning guide. Pressure is then applied by an ordinary hydraulic or pneumatic press fitted with flat dies or by a rivet squeezer. No clinching tools required.



Step 2. Pressure displaces sheet metal around edge of hole, forcing it into retaining groove. Knurls on swage ring increase resistance to torque-out, provide relief for metal flow. Note smooth bottom surface.

For More Information Write No. 226 on Inquiry Card—Page 32  
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SPS swage nuts offer you a fast, economical means of putting load-bearing threads in sheet metal. They require no clinching tools, can be installed with an ordinary press fitted with flat dies. Also they do not project from the opposite side of the plate—a design advantage where minimum clearances are involved. And they do not discolor, deform or buckle the metal in which they are installed.

Push-out and torque-out values for SPS swage nuts are the highest available for fasteners of their type. This insures proper torquing of screws and increases reliability under working loads and vibration.

New SPS swage nuts can be used in metals with a hardness up to approximately Rockwell C25. This includes steel, as well as the usual alloys of copper, Monel and aluminum. Swage nuts come in sizes #2 through  $\frac{1}{2}$  in. (2B threads), with shank lengths for plate thicknesses from .020 to .250 in.

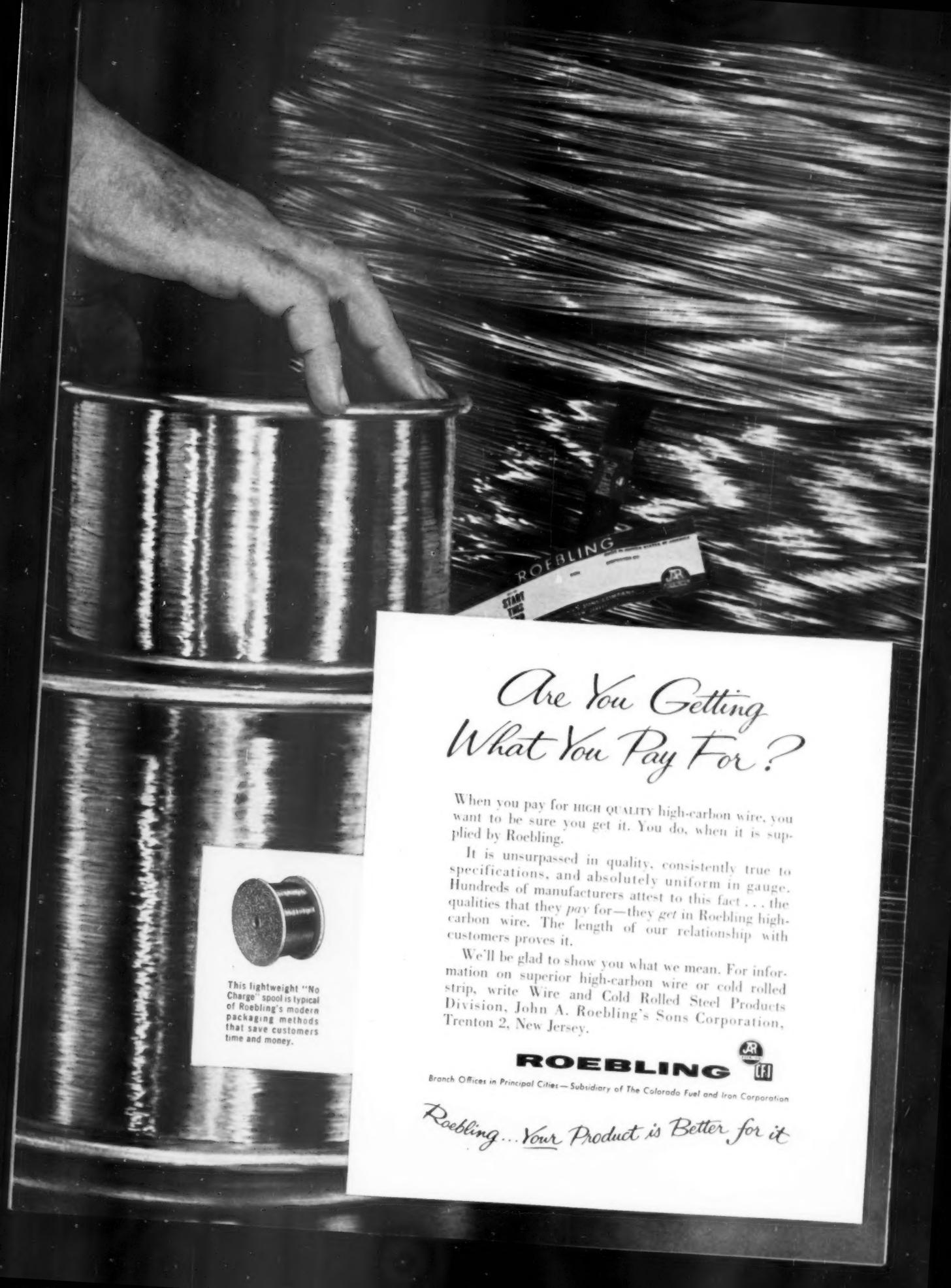
For new Bulletin 2447 or samples, write SPS—manufacturer of precision threaded fasteners and allied products in many metals, including titanium. Aircraft/Missiles Division, STANDARD PRESSED STEEL CO., Jenkintown 31, Pa.



Jenkintown • Pennsylvania

Standard Pressed Steel Co. • The Cleveland Cap Screw Co. • Columbia Steel Equipment Co. • National Machine Products Co. • Nutt-Shel Co. • SFS Western • Standco Canada Ltd. • Unbrako Socket Screw Co., Ltd.

For More Information Write No. 227 on Inquiry Card—Page 32  
PURCHASING



## *Are You Getting What You Pay For?*

When you pay for HIGH QUALITY high-carbon wire, you want to be sure you get it. You do, when it is supplied by Roebling.

It is unsurpassed in quality, consistently true to specifications, and absolutely uniform in gauge. Hundreds of manufacturers attest to this fact . . . the qualities that they *pay for*—they *get* in Roebling high-carbon wire. The length of our relationship with customers proves it.

We'll be glad to show you what we mean. For information on superior high-carbon wire or cold rolled strip, write Wire and Cold Rolled Steel Products Division, John A. Roebling's Sons Corporation, Trenton 2, New Jersey.

**ROEBLING**

Branch Offices in Principal Cities—Subsidiary of The Colorado Fuel and Iron Corporation

*Roebling...Your Product is Better for it*



*Workers go for functional good looks*

## This new Bausch & Lomb safety frame has got it... PLUS



C-20  
combination  
metal/plastic

Newest concept in safety eyewear, designed by Bausch & Lomb to meet the needs of today and tomorrow. Smart, with superior fitting qualities and unequalled strength, C-20 represents the finest in scientific eye protection. Spatula or riding bow temples and Bausch & Lomb Redy-Fit side shields available for on-the-job interchangeability. See it now; call your supplier, or write for information: Bausch & Lomb Optical Co., 90641 Smith Street, Rochester 2, New York.



**PROTECTION PLUS**  
*Safety Eyewear*

protection+economy+worker acceptance

For More Information Write No. 228 on Inquiry Card—Page 32



Metallurgical Memo from General Electric

## Why G-E man-made industrial diamonds are revolutionizing carbide grinding

Metallurgical Products Department reports on users' experience. Results: 35% higher average efficiency . . . at least 20% lower power consumption . . . than is possible with natural diamonds.

Now it has been proved . . . grinding wheels containing General Electric man-made diamonds *actually out-perform natural diamonds!*

In actual production, G-E man-made diamonds have maintained sharper cutting edges, have cut more freely. They top natural bort because rigid manufacturing control maintains uniform quality. G-E man-made diamonds are more blocky and rough surfaced . . . provide extra support in the bond. They are also more friable, so that sharp,

new cutting edges are constantly presented in the grinding operation.

Wheels made with General Electric man-made diamonds are available *in quantity* now. They'll deliver a production bonus averaging 35%. Be sure you cash in on this superior performance by specifying wheels containing G-E man-made diamonds from your regular wheel supplier. *Metallurgical Products Department of General Electric Company, 11143 E. 8 Mile Blvd., Detroit 32, Michigan.*

### METALLURGICAL PRODUCTS DEPARTMENT

**GENERAL**  **ELECTRIC**

CARBOLOY® CEMENTED CARBIDES • MAN-MADE DIAMONDS • MAGNETIC MATERIALS • THERMISTORS • THYRITES® • VACUUM-MELTED ALLOYS

MAY 11, 1959

For More Information Write No. 229 on Inquiry Card—Page 32

Remember -

**H & S**

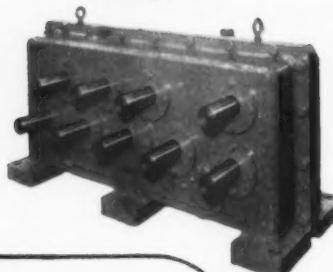
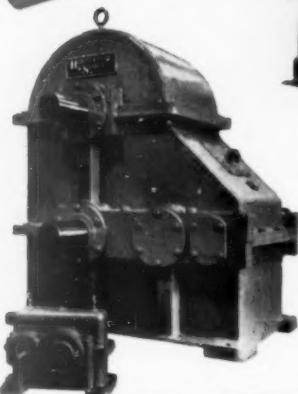
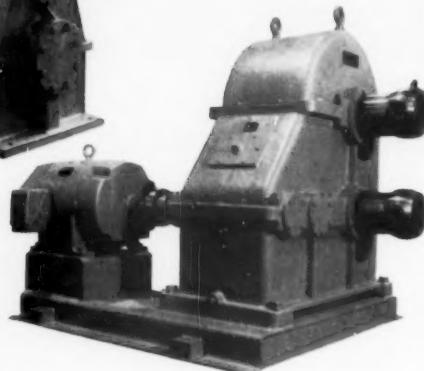
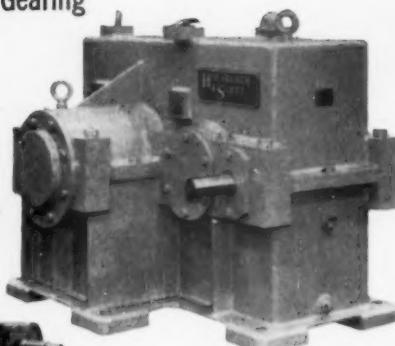
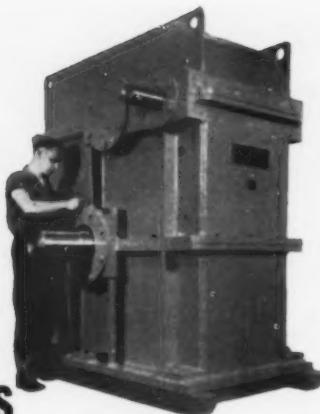
saves you time  
and money on

**Large Special Drives**

Helical • Herringbone • Worm Gearing

H & S engineers are thoroughly experienced in the design of special drives—can solve unusual drive and transmission problems at the lowest possible cost . . . in the shortest time. Can we help you? Write or call today.

For data helpful in selecting all types of speed reducers and gearing, our Catalogs 55 and 57 are available on request.



**THE HORSBURGH & SCOTT CO.**

GEARS AND SPEED REDUCERS

5112 Hamilton Avenue • Cleveland 14, Ohio

For More Information Write No. 230 on Inquiry Card—Page 32

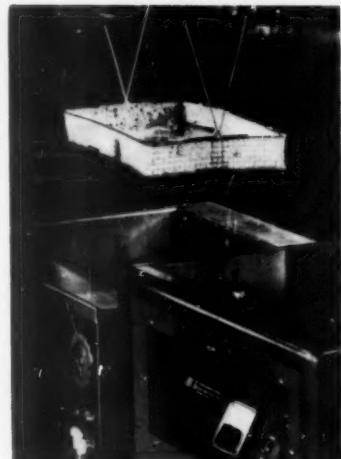
## Products

(Continued from page 130)

easy adjustment from one package weight to another, and speeds of up to 40 items per minute are features. Equipped with a belt-type motorized conveyor on the weigh section, new Model 9460 continuously checkweighs bags, cartons, boxes, packages, blocks, cans, or tubes without stopping the item on the scale. Unit can provide remote visual check on operations, supply numerical data useful in control, and operate reject mechanisms, audible signals, and trend indicators.

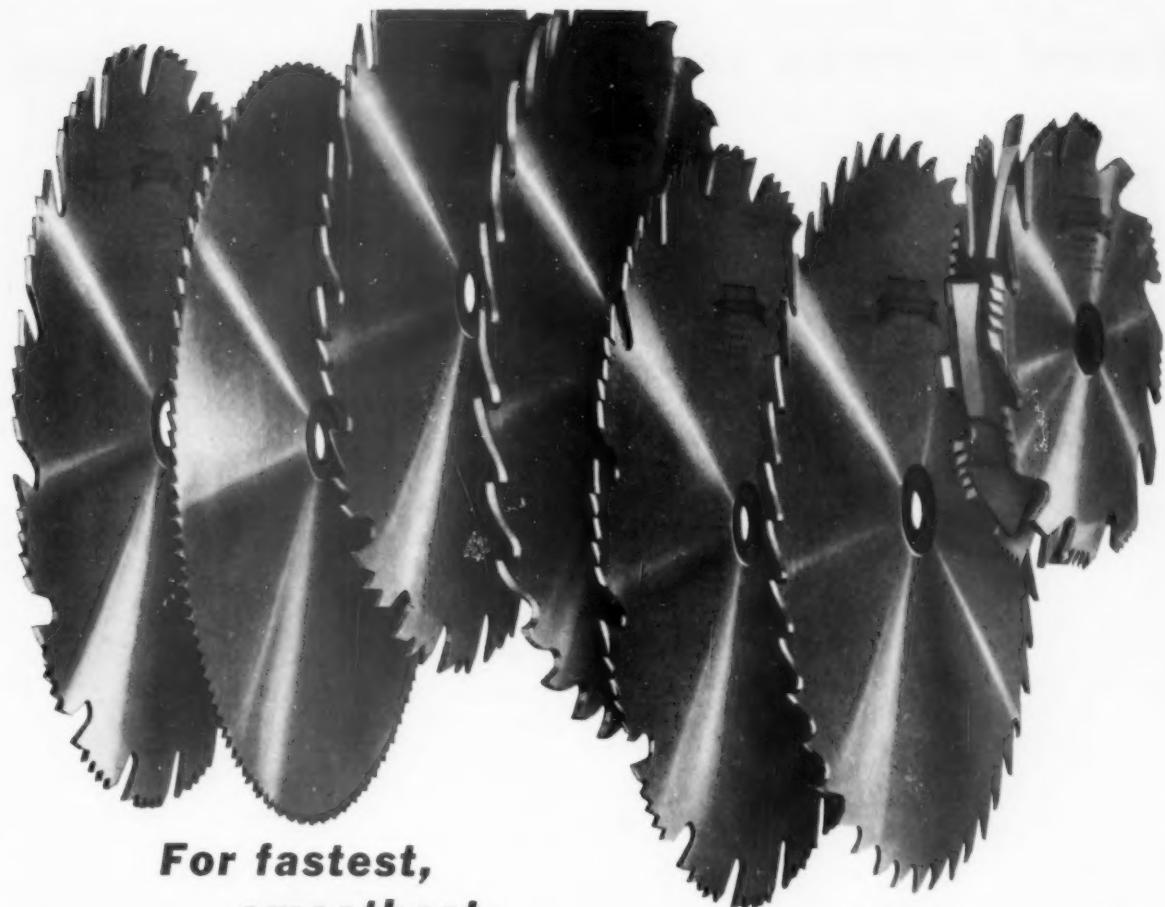
Write No. 31 on Inquiry Card—Page 32

### **Ultrasonic Cleaners In Modular Design**



Featuring Modular Construction, Glennite ultrasonic cleaners save money and operate at peak efficiency over the full range of industrial applications. Tanks and generators can be interchanged to meet specific needs. Five separate tank sizes and six pre-set generators are used in construction of thirteen different cleaners. Cleaning tanks are available in 1/2, 2-1/2, 6, 16, and 25 gallon sizes. Generators are pre-set at 50, 100, 200, 500, 1,000, and 2,000 watts. Side-mounted to provide the maximum in cleaning efficiency, high-temperature ceramic transducers are capable of operating at 350° F, 200 degrees higher than previous models. Developed by Gulton Industries, Inc., 212 Durham Ave., Metuchen, N.J.

Write No. 32 on Inquiry Card—Page 32



**For fastest,  
smoothest,  
lowest cost cutting  
always insist on**

**SIMONDS SAW**

The facts behind the better results you're sure to get with Simonds "Red Center" Saws are simply these: BETTER STEEL, REAL MANUFACTURING KNOW-HOW and EFFECTIVE QUALITY CONTROL.

Simonds special alloy steel is better because it's cross-rolled for more uniform grain structure which provides extra toughness and edge-holding ability. Simonds know-how is based on 83 years of saw making, using the most up-to-date heat treating, grinding, tensioning and sharpening equipment and methods. Effective quality control covers every step in manufacture — insures that every saw is perfectly round and flat, will run true and cut straight, smooth and fast under all conditions.

It will pay you to put "Red Center" Saws on all your machines. Saw types and sizes for every need — many are available from your local distributor's stock.

**"Red Center"**

*Left to Right:*  
Planer, Cut-Off, No. 52 Combination,  
Rip, No. 54 Combination,  
No. 60 Combination, Dado Head



**SIMONDS  
SAW AND STEEL CO.**

FITCHBURG, MASS.

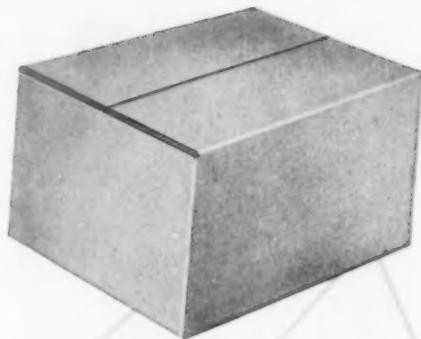
Factory Branches in Boston, Chicago, Shreveport, La., San Francisco and Portland, Oregon  
Canadian Factory in Montreal, Que., Simonds Divisions: Simonds Steel Mill, Lockport, N. Y., Heller Tool Co., Newcomerstown, Ohio  
Simonds Abrasive Co., Phila., Pa., and Arvida, Que., Canada

For More Information Write No. 231 on Inquiry Card—Page 32

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# What's the worst



## *What you should know about testing of Union Boxes*

You might try dropping it (filled) on a metal floor . . . compressing it . . . bouncing it in a revolving drum.

These are just a few of the ordeals corrugated board and boxes undergo before the finished container is delivered to your plant. No single one is "worst" or "best", or will give a true measure of *overall* performance. Yet each is uniquely important.

Some of these tests, made on Union Board and Boxes, are described here. They represent another part of Union's structural design service to all shippers.

### **1. Shock treatment**

During rail or truck shipment, your box must be able to withstand the shocks of sudden stops and turns. To measure its impact resistance, filled box is shot down an inclined runway and bounced against a solid backstop.



1. Impact test



2. Mullen test

# punishment you can give a box?

## 2. The bursting "barometer"

A railroad ride can be rough experience. That's why boxes shipped this way must meet minimum standards for bursting strength of board as set by Freight Classification Rule 41. If they pass this trial, known as the Mullen Test, they're ready for the worst jolts and jerks.

## 3. Testing for tear

Box flaps are scored to make them fold and unfold easily at your plant and at final destination. The easier the better. But during scoring some strength at that point must be lost. How much, and how much is retained, is measured by the combined Torsion-Tear Test.

## 4. "Squeeze-box" hazard

Whatever your product it will be subjected to all sorts of pressures on all sides during shipment and storage. The Compression

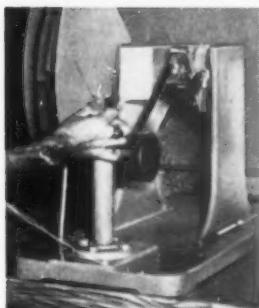
Tester anticipates these forces. It squeezes empty box till collapse to test for rigidity and stacking strength . . . helps weed out possible trouble sources such as poor adhesion, scoring, joints and corrugations.

## 5. Down she goes!

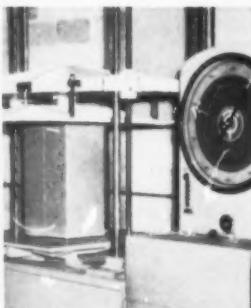
Bad falls are among the commonest causes of failure. The Drop Test—repeated flat-on-face and corner drops of loaded box on to a metal surface—provides a real gauge of the box's resistance to sudden shocks. Test also checks suitability of tape and strength of manufacturer's joints.

## 6. Taking a tumble

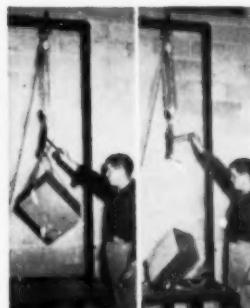
It takes a tough box to survive the Drum Test's "black-and-blue" treatment. Drum rotates, box inside tumbles against fixed metal obstacles until it finally fails. Test is an excellent gauge of the durability of facings, flutes, seams and interior packing.



3. Torsion-Tear test



4. Compression test



5. Drop test



6. Drum test



**UNION BOXES**

UNION BAG-CAMP PAPER Corporation

233 BROADWAY, NEW YORK 7, N. Y.

Write for new, informative booklet, "Quality Control of Corrugated Boxes."

**Factories:** Savannah, Ga., Trenton, N. J., Chicago, Ill., Lakeland, Fla.

**Sales Offices:** Eastern Division—1400 E. State Street, Trenton, N. J.  
Southern Division—P.O. Box 570, Savannah, Ga.; P.O. Box 454, Lakeland, Fla.  
Western Division—4545 W. Palmer, Chicago, Ill.

For More Information Write No. 232 on Inquiry Card—Page 32

## Riverside continuous casting saves you production time, cuts rejects

Brass and other copper-based strip, rod, and wire from Riverside produces consistently better end products for you—free of weak points that result in rejected pieces or whole batches.

How do we do it? By *continuous casting*, a process we introduced to this country—a process that eliminates air holes and impurities, leaving a dense, homogeneous casting for better wire-drawing and other fabrication requirements.

Get the full cost-saving story from *Riverside-Alloy Metal Division, H. K. Porter Company, Inc., Riverside, N.J.*

good  
riddance  
to  
“Swiss  
Cheese”  
castings!



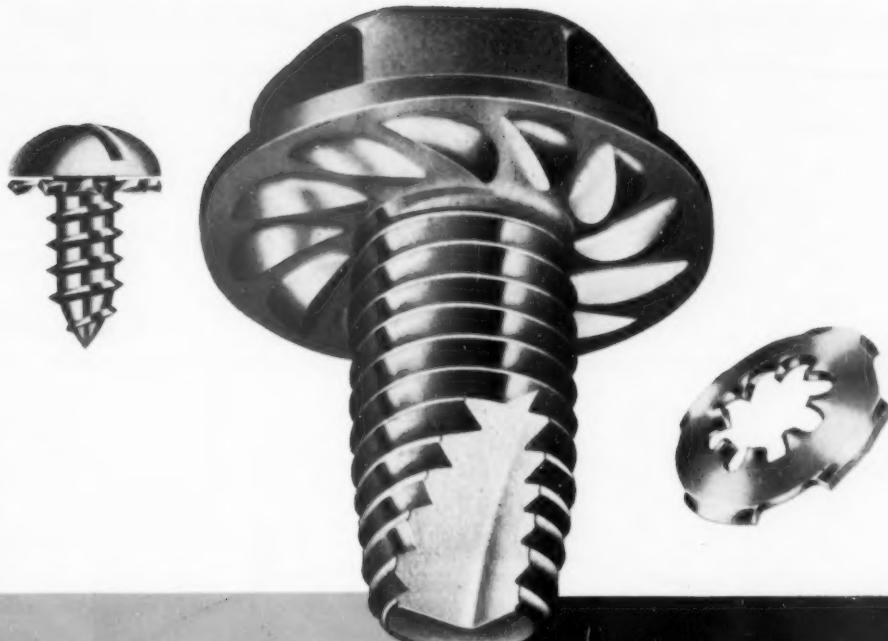
**RIVERSIDE-ALLOY METAL DIVISION**

**PORTER**

**H.K. PORTER COMPANY, INC.**

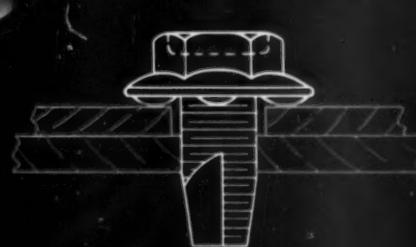
**PORTER SERVES INDUSTRY:** with Rubber and Friction Products—THERMOID DIVISION; Electrical Equipment—DELTA-STAR ELECTRIC DIVISION, NATIONAL ELECTRIC DIVISION; Copper and Alloys—RIVERSIDE-ALLOY METAL DIVISION; Refractories—REFRACTORIES DIVISION; Electric Furnace Steel—CONNORS STEEL DIVISION, VULCAN-KIDD STEEL DIVISION; Fabricated Products—DISSTON DIVISION, FORGE AND FITTINGS DIVISION, LESCHEN WIRE ROPE DIVISION, MOULDINGS DIVISION; and in Canada, Refractories, "Disston" Tools, "Federal" Wires and Cables, "Nepcoduct" Systems—H. K. PORTER COMPANY (CANADA) LTD.

For More Information Write No. 233 on Inquiry Card—Page 32



**HOW TO SELECT  
COST-SAVING**

# fasteners for sheet metal

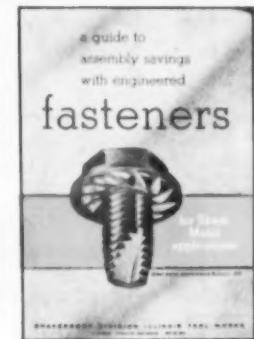


**A TYPICAL EXAMPLE:  
How to Avoid Stripping—**

When high stripping torques are required, a Shakeproof NIBSCREW® should be used. "Nibs" under the head take up excessive driver torques and eliminate loose screws, re-work and repair.

You can realize important savings on your assembly line by specifying fasteners that eliminate operations, speed up production and assure highest quality. Engineered Fasteners by Shakeproof now overcome stripping, provide sealing, assure maximum locking and solve countless production problems encountered in mass assembly of products using sheet metal.

**SEND FOR NEW SHAKEPROOF BULLETIN NO. 1001**  
Illustrates twelve typical examples of cost saving fasteners for sheet metal applications. Describes important "check points" for fastener selection. Offers testing samples. Write for your copy today!



## **SHAKEPROOF** "FASTENING HEADQUARTERS"®

**DIVISION OF ILLINOIS TOOL WORKS**

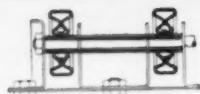
St. Charles Road, Elgin, Illinois  
In Canada: SHAKEPROOF/FASTEX  
Division of Canada Illinois Tools Limited, 67 Scarsdale Road, Don Mills, Ontario

For More Information Write No. 234 on Inquiry Card—Page 32

MAY 11, 1959

141

## F-M Spacers Save Money in Hundreds of Applications. Spacers shown in Red



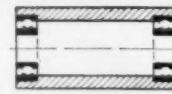
Cross member dividers on conveyor sections.



Motor mount bolt sleeve spacer.



Control rod spacers.



Before and after:  
Two spacers replace  
undercut machined wheel hub



Leaf spring bolt spacer.



Spacer-stabilizer linkage.



Spacers can effect savings in many manufacturing and assembly operations—from automobiles to pull toys, phonographs to corn pickers. Furnished to your exact dimensions, ready to assemble, they are an economical substitute for iron pipe, tubing or machined parts; eliminate

costly cut-off and de-burring machine time; save on secondary operations such as slots, holes, notches and chamfers. In steel, aluminum and stainless. Plain or plated. Many lengths, diameters and wall thicknesses. Complete engineering service.

FREE design data book on standard and special spacer specifications. Address:

### FEDERAL-MOGUL DIVISION

FEDERAL-MOGUL-BOWER BEARINGS, INC.  
11077 SHOEMAKER, DETROIT 13, MICHIGAN

**FEDERAL**  
**Mogul**

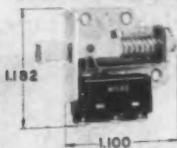
RESEARCH

MANUFACTURING

For More Information Write No. 235 on Inquiry Card—Page 32



## MICRO SWITCH Precision Switches



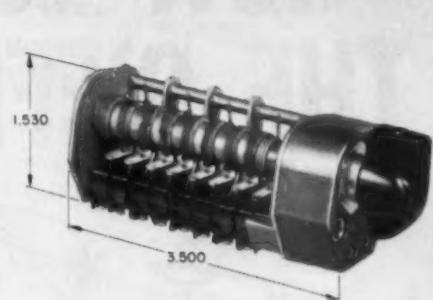
### Subminiature door interlock for hazardous equipment

17AC1-T subminiature door interlock switch is the smallest, most compact switch available for an automatic door interlock for hazardous equipment cabinets. Actuator may be pulled to maintained-contact position. It automatically resets when the cabinet door is closed. Dependable in temperatures from  $-65^{\circ}$  to  $+250^{\circ}$ F. Data Sheet 159.



### Here is the smallest precise snap-action switch available

Miniaturized subminiature, the "1SX1", weighs but 1 gram, yet is capable of millions of precise operations. Operates dependably from  $-65^{\circ}$  to  $+250^{\circ}$ F. Rating is 5a 115/230 vac resistive, 15a max. inrush. 28 vdc: 7a resistive, 4a inductive; 4a motor load, 24a max. inrush. Data Sheet 148.



### 8-circuit selector switch mounts in less than 1.75" dia.

"28AS" Series selector switches have 2 to 4 positions, can control up to 8 circuits. Enclosed SPDT contacts, positive non-tease detents, sealed actuating mechanism. For electronic, computer and aircraft instrument panels. Data Sheet 162.

### New "Plug-in Limit" switch with side roller actuator

203LS1 "Plug-in Limit" switch increases the usefulness of the pace-setting "Plug-in Limit" line. These switches, which can be replaced in 20 seconds, are now available in 8 different actuator types. All are rugged, reliable, compact and completely sealed. Their use virtually eliminates downtime. Catalog 84.



### A toggle switch that mounts in $\frac{1}{4}$ sq. in.

2TM1-T weighs  $4\frac{1}{2}$  grams. Ideal for use with printed and transistorized circuits and in compact communication equipment. Operates dependably from  $-65^{\circ}$  to  $+200^{\circ}$ F. DPDT. Data Sheet 158.



## 5 NEW compact precision switches meet wide variety of industrial design needs

Only MICRO SWITCH offers industrial designers an almost unlimited line of precise, snap-acting switches to meet the most exacting design requirements.

When you bring your switch design problems to MICRO SWITCH you have the cooperation of switch specialists of the world's largest exclusive manufacturer of precision switches. Consultation costs you nothing . . . may enable you to put your product on the market at important savings of time and money. These 5 new switches are typical of the wide variety MICRO SWITCH offers.

Engineering assistance on all switch design and application problems is available from MICRO SWITCH branch offices. Consult the Yellow Pages.

MICRO SWITCH . . . FREEPORT, ILLINOIS

A division of Honeywell

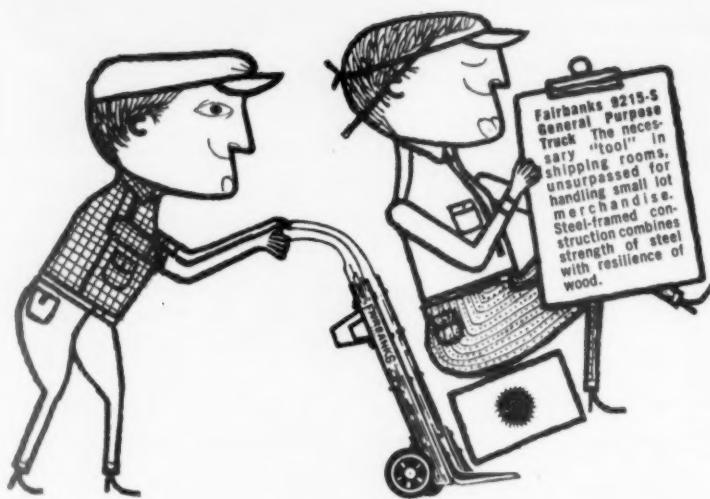
In Canada: Honeywell Controls Limited, Toronto 17, Ontario



**Honeywell**  
MICRO SWITCH Precision Switches

For More Information Write No. 236 on Inquiry Card—Page 32

# HOW TO DO THE DIFFICULT



Have happier workers and a happier boss both achieved by use of **FAIRBANKS COST-CUTTER TRUCKS!**

Just think of trucks as tools. Then you instantly recognize that the right trucks must make lighter work of materials handling. Your men with the right tool—the right truck—do more with less effort and with greater safety. You realize surprisingly large time and cost savings. Select your COST-CUTTER Truck now from Fairbanks complete line of Two Wheel and Platform Hand Trucks. Always specify

Fairbanks Trucks for the rugged construction and smoother operation that brings added savings in long-lasting dependable service. Fairbanks Trucks are available from leading distributors in all the principal cities.

**YOURS ON REQUEST:** Big colorful catalog, #T-54, describes most complete line of trucks and applications. Write for your free copy of this valuable catalog today.



**THE FAIRBANKS COMPANY**

Executive Office — 393 Lafayette Street, New York 3, New York

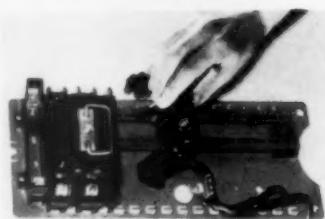
Valves • Dart Unions • Trucks • Casters • Wheels

• 520 Atlantic Avenue, Boston 10, Mass. • 393 Lafayette Street, New York 3, N. Y. • 15 Stanwix St., Pittsburgh 22, Pa. • 202 Division St., Rome, Ga. • Factories — Rome, Ga. and Binghamton, N. Y.

For More Information Write No. 237 on Inquiry Card—Page 32

## Products

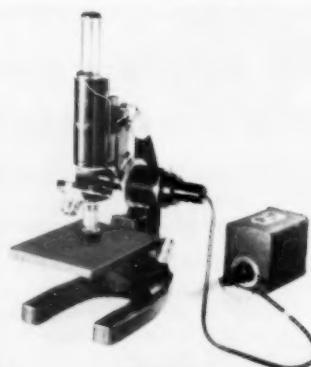
### Stab-In Fusible Service Equipment



A new line of stab-in fusible service equipment has been developed by Federal Pacific Electric Co., 50 Paris St., Newark 1, New Jersey. 100% modular, the system reduces inventory requirements, simplifies circuit selection problems, cuts installation time, and is adaptable to changing electrical needs. A total of only ten enclosures and five stab-in units will handle all applications up to 200 amps. Dual stab-in units are extremely compact and can be inserted in seconds when and where needed; no bolted connections are necessary. The ten enclosures—five series types and five parallel type (split bus)—meet all requirements, up to 200 amps., and are UL approved for use with aluminum as well as copper conductors.

Write No. 33 on Inquiry Card—Page 32

### Low-Cost Microscope for Routine Applications



Low-cost metallurgical microscopes for routine applications have been announced by Bausch and Lomb Optical Co., 635 St. Paul St., Rochester 2, N.Y. The (Please turn to page 148)

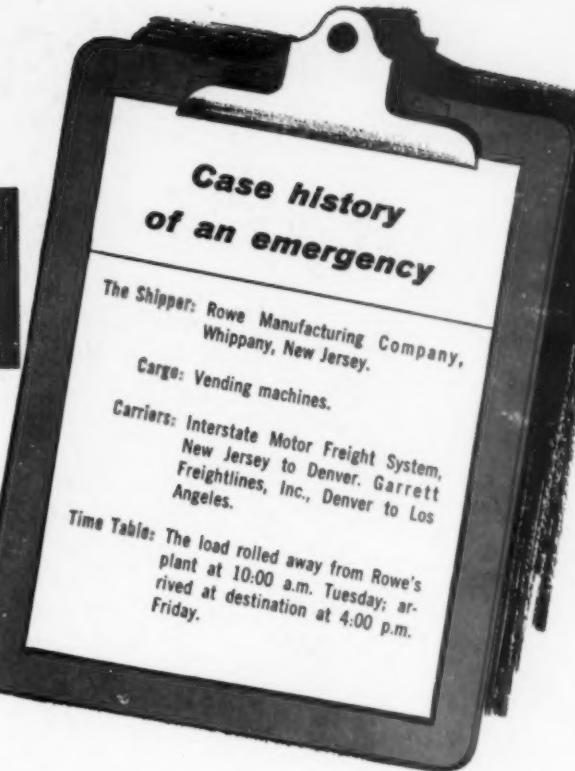
# THIRD AFTERNOON DELIVERY

## Coast to Coast!

When the chips are down and you urgently need exceptionally fast service, you can get it from Interstate System just like Rowe Manufacturing did. Here's how that traffic was handled:

As the shipment left Rowe's plant, Interstate's long-line private telephones were humming, arranging for power changes at Bedford, Pa., Norwalk, Ohio and Chicago.

Rowe's load went through the Chicago gateway without delay — in and out of the city in less than four hours.



While the shipment sped across the plains, Garrett Freightlines, Interstate's West Coast carrier, was alerted. The interchange was made smoothly at Denver, and the shipment sailed through the mountains to Los Angeles.

**FOR YOU, TOO:** For swift, safe, dependable service to big cities and small towns — either coast-to-coast or short distance — use Interstate System.

Your local Interstate System man is listed in the Yellow Pages. Give him a call!

### Three reasons why Interstate moves so fast!



MORE THAN A TRUCK LINE...  
A TRANSPORTATION SYSTEM



**INTERSTATE  
MOTOR FREIGHT  
SYSTEM**

GRAND RAPIDS, MICHIGAN



**Gulf makes things run better, with—**

# **NEW GULFCROWN**

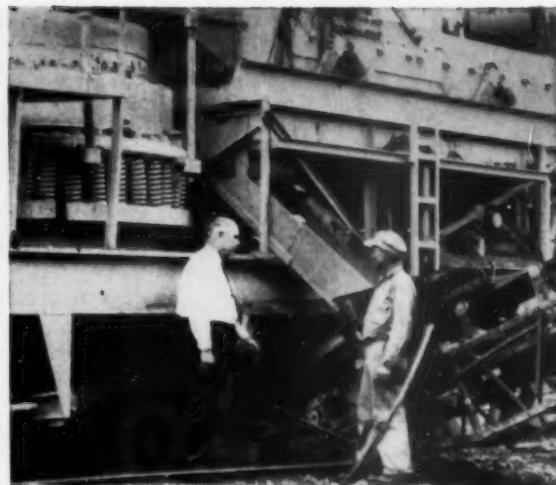
**Here's a multi-purpose lithium base grease for bearings in heavy duty service.**

It's a completely new bearing grease that effectively lubricates bearings operating under high loads, shock loads and with oscillating motion.

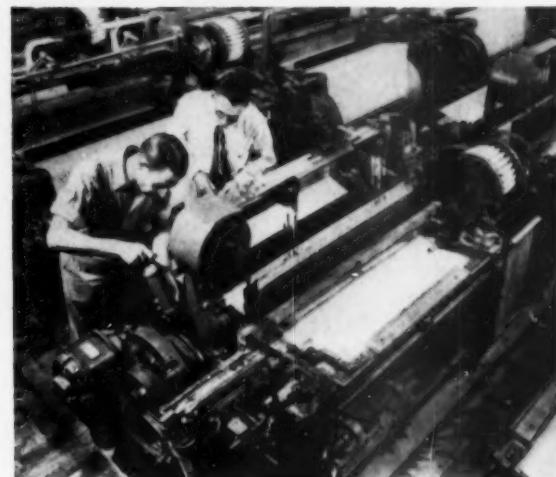
New Gulfcrown Grease E.P. will give you plenty of proof that Gulf makes things run better. It resists heat, cold, moisture and mechanical breakdown. It has excellent oxidation stability and protects against corrosion.

You'll find that this new grease pumps freely at 0°, yet stands up at temperatures to 250° F., and even higher under certain conditions.

New Gulfcrown E.P. is an unusually versatile multi-purpose grease. For example, it gives excellent results in the lubrication of heavily loaded trunnion bearings . . . steel mill work rolls and table rolls . . . sliding dog clutches . . . spiral gear boxes . . . Banbury mixers . . . the bearings, cams and gears in textile looms . . . and



In hard-working equipment, like stone crushers, new Gulfcrown Grease E.P. withstands extremely high shock loads in grease lubricated bearings.



In textile mills the excellent residual anti-weld properties of new Gulfcrown Grease E.P. makes it the ideal lubricant for loom bearings, cams, pick balls and gears.

In steel mills, new Gulfcrown Grease E.P. will successfully withstand the high temperatures and extreme pressures encountered in the lubrication of work rolls and table rolls.

## GREASE E.P.

a host of other heavy-duty industrial applications.

Gulfcrown E.P. can be used for electric motor bearings, fans, pumps and for nearly every type of application. Can be applied through centralized systems or by gun. Available in NLGI consistencies 0, 1 and 2.

Find out how Gulfcrown E.P. can improve your operation and help you get lower maintenance costs. Call your Gulf Sales Representative at the nearest Gulf office. Meanwhile, mail coupon for new booklet.

MAY 11, 1959

For More Information Write No. 239 on Inquiry Card—Page 32

**GULF OIL CORPORATION**

Dept. DM, Gulf Bldg., Pittsburgh 30, Pa.

Please send booklet on new  
Gulfcrown Grease E.P.

Name

Title

Company

Address

City  Zone  State



## Hints on fluorescent starter selection



## YOU CAN USE STANDARD 40W LAMPS IN COLD AREAS WITH G-E FS-44 STARTERS

General Electric FS-44 thermal-switch type starters will start standard 40W preheat lamps reliably at low ambient temperatures — down to 0 F because the preheat time they provide remains constant. Standard glow-switch type starters, under these conditions, require specially-designed low-temperature service lamps for satisfactory operation.

To get more money-saving hints, ask your G-E distributor for the "G-E Starter Selection Chart and Maintenance Guide for Fluorescent Lighting." General Electric Company, Wiring Device Department, Providence 7, Rhode Island.



**GENERAL ELECTRIC**

For More Information Write No. 240  
on Inquiry Card—Page 32

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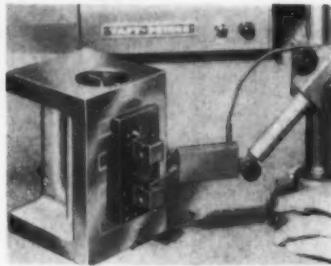
## Products

(Continued from page 144)

new microscopes provide quick, accurate examinations of metal specimens and other opaque objects, are easily portable, and feature full-sized, easy-to-grasp control knobs. Fine adjustment knob assures accurate results in focusing; ball-bearing construction guarantees precise positioning of objective and exact repeats. Monocular or binocular bodies can be used interchangeably and wide range of measuring accessories is available. Available with transformer and standard equipment in two models.

Write No. 34 on Inquiry Card—Page 32

## Magnetic Angle Iron for Layout and Inspection



A new magnetic angle iron is said to combine the advantages of a universal right angle iron with a magnetic chuck. Magnetic iron holds work firmly in place for measuring, scribing, or indicating, saves time and eliminates inconvenience. Magnetic face plate is energized by means of a control bar, one of which is recessed in each end face. A 25 degree turn produces a "fringe" magnetic setting which allows the work-piece to be easily adjusted to final location before full holding power is applied by a 90 degree turn. Iron can be turned on its side, back, or ends for checking work in different positions. Faces, side and ends are precision ground, square and parallel within .0002 in. Overall dimensions are: 4-3/4 in. long, 4-1/4 in. wide, 6-1/2 in. high. Approximate weight is 18 lbs. Taft-Pierce Manufacturing Co., Woonsocket, Rhode Island.

Write No. 35 on Inquiry Card—Page 32

## Locking screws with **LOCTITE** increases production

**23%**



Assembling Hobbs Hour Meters

Mr. LeRoy L. Rasch  
John W. Hobbs Div., Stewart-Warner Corp.  
Springfield, Illinois, says:

"We all try to cut costs. For example, we used a resin-type product to hold screws in assembling Hobbs Hour Meters. It was necessary for a girl to dip a little piece of wire into the compound, transfer it to the screw hole, and then assemble the screw. With 18 screws this was a slow and tedious job. We switched to LOCTITE Sealant and increased production while making the job easier for the girls. Operators now produce 23% more meters per hour thanks to LOCTITE! This increased production is accomplished by tumbling large batches of screws with LOCTITE in a polyethylene bag. The screws, treated and ready, are spread in front of the operator within easy reach. LOCTITE will not harden in air, but sets firmly when screws are assembled. LOCTITE saves us time and money by virtually eliminating the labor of applying the staking compound to the screws. LOCTITE cut costs for us with no effort at all."

LOCTITE is a thin liquid that hardens when confined between closely fitting metal parts. One drop replaces all size lock nuts, lock washers, lock screws, staking, jam nuts and interference threads. It forms a tough heat and oil resistant bond that resists any amount of vibration . . . yet ordinary tools will remove fasteners. LOCTITE requires no heating or mixing . . . treated parts can be stored for days . . . lock only when assembled. Write for literature and free sample.

**LOCTITE®**  
SEALANT  
AMERICAN SEALANTS COMPANY

117 Woodbine St., Hartford 6, Conn.

See LOCTITE—Booth 1653 Design Engineering Show

For More Information Write No. 287  
on Inquiry Card—Page 32

PURCHASING



## WHY DID THIS BOLT FALL OFF?

Where is the culprit . . . the nut whose function was to keep the bolt securely in place? Undoubtedly it fell off earlier . . . loosened by vibration . . . or unexpectedly high shock loads due, perhaps, to a careless operator. In any event, the bolt was pounded into uselessness . . . and failed. Chances are that the equipment the bolt and nut were part of is temporarily useless too.

Why then, was an inadequate fastener applied in the first place? Perhaps because "bolts and nuts" are often overlooked or specified routinely. Perhaps to save a fraction of a cent. Whatever the reason, the end result was inefficient and uneconomical. The nut failed—the fastening failed—and the product failed.

It could have been prevented. An Elastic Stop® nut would have held on. The small extra cost of the *best* self-locking nut would have solved this case . . . saved repair bills . . . downtime . . . and a manufacturer's reputation.

For detailed photos showing how some of America's foremost manufacturers of heavy equipment have insured critical bolted connections with Elastic Stop nuts on such units as rock drills, scrapers, snow plows, off-the-road trucks . . . write to ESNA. Or, for first hand proof, tell us the preferred size and we'll send you test samples. Address: Dept. S35-515, Elastic Stop Nut Corporation of America, 2330 Vauxhall Road, Union, New Jersey.

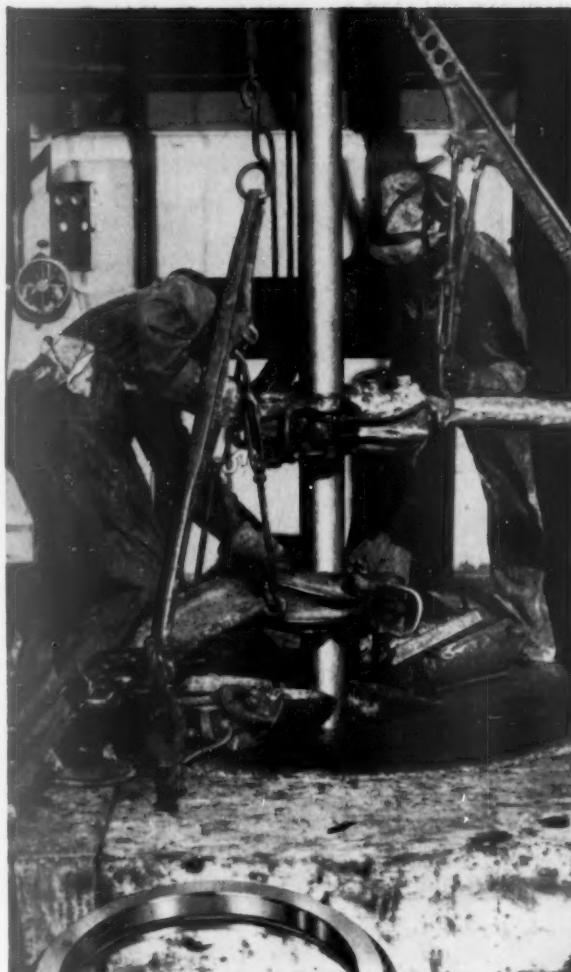


### DOUBLE DEPENDABILITY

The dependability built into every Elastic Stop nut builds itself into the dependability of every product on which it is used.

**ELASTIC STOP NUT CORPORATION OF AMERICA**





from  
drilling rigs...



to  
automobiles

## Torrington makes the right anti-friction bearing for every basic need!

In the oil fields where your gasoline originates, the need may be for a special Torrington Angular Contact Rotary Table Bearing to support thousands of feet of whirling drill string. In your car, it may be a compact Torrington Needle Bearing to smooth your steering.

Between these two examples lie all kinds of requirements. To meet this broad range of needs, Torrington makes every basic type of anti-friction bearing.

You can be confident that engineering recommendations from Torrington will bring the broadest experience to bear on your specific application requirements. For help in developing the *right* anti-friction application for your product, rely on your Torrington representative. **The Torrington Company, Torrington, Conn.—and South Bend 21, Ind.**

See Our Exhibit. International Petroleum Exposition, Tulsa. May 14-23.

### **TORRINGTON BEARINGS**

*District Offices and Distributors in Principal Cities of United States and Canada*

NEEDLE • SPHERICAL ROLLER • TAPERED ROLLER • CYLINDRICAL ROLLER • BALL • NEEDLE ROLLERS • THRUST

For More Information Write No. 242 on Inquiry Card—Page 32  
150

For More Information Write No. 243 on Inquiry Card—Page 32→  
PURCHASING

# carefree is stainless steel

The gleaming efficiency of Stainless housewares is a joy to every woman. Everything made of Stainless Steel cleans with ease, lasts a lifetime and brightens-up the home.

No other metal offers the freedom of design and fabrication, economy of care and the durable beauty that serves and sells like Stainless Steel.

McLOUTH STEEL CORPORATION, Detroit 17, Michigan



specify

**McLOUTH STAINLESS STEEL**

HIGH QUALITY SHEET AND STRIP

for homes and home products

# Office Equipment and Supplies

## Forms Forum

A TWO-MAN purchasing department must use forms that are simple and to the point; forms that can give complete, efficient results with the least possible effort.

Howard A. Taylor, purchasing agent at Battle Creek Packaging Machines, Inc., Battle Creek, Mich. had this problem and met it head-on using the series of forms illustrated here.

The pre-numbered requisition which originates in the production department is a two-part form. One copy, of course, goes to purchasing while the other is retained in production department files. The number on the requisition is carried right through to the purchase order and receiving report.

Since a copy of the receiving report is attached to the merchandise going into stock, the entire cycle, from the originator through purchasing, receiving and back to the originator (now as user), is tied together with a single identifying number.

A copy of the four-part receiving form is sent to purchasing. The quantity received is written next to the quantity ordered on the file copy of the purchase order (kept in alphabetic sequence by vendor). When the invoice is received, if the order is incomplete the item it covers is circled.

Follow-up is handled by reviewing file folders for five or six letters of the alphabet each day. This permits a review of every open order once each week.

This system has functioned satisfactorily for Mr. Taylor and entails a very minimum of clerical work while providing Battle Creek Packaging Machines with all necessary facts and figures.

**BATTLE CREEK PACKAGING MACHINES, INC.**  
BATTLE CREEK, MICHIGAN  
REQUEST FOR PURCHASED MATERIAL

FACTORY  
DISTRIBUTION  
No. 01248

Purchasing Department—  
Please Order the Following:

Item	Quantity Desired Code	Required
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

**BATTLE CREEK**  
Packaging machines, Inc.  
BATTLE CREEK, MICH.

**PURCHASE ORDER**  
No. 03264

RECEIVING REPORT  
NOTE: SEPARATE REPORT MUST BE MADE OUT FOR EACH DELIVERY

BATTLE CREEK PACKAGING MACHINES, INC.  
BATTLE CREEK, MICH.

ITEM NO. QTY. DATE 1-15

ADDRESS

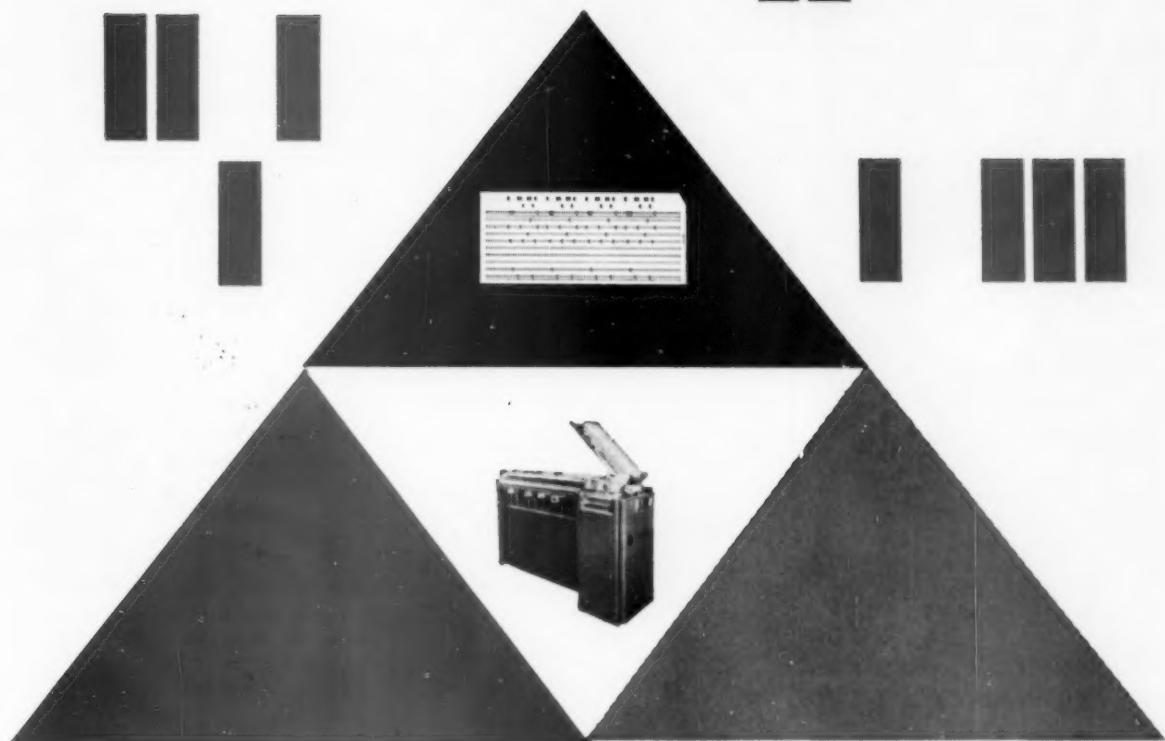
REPAID  CORRECT

1

STOCK CARD  
ITEM NO. QTY. DATE 1-15  
REPAID  CORRECT

No. 00711

partners in precision



Behind the excellent performance of IBM punched cards lies a painstaking quality-control program that has no parallel in the industry. The continuing progress of IBM Research, coupled with more than forty years of manufacturing know-how, has achieved production techniques that assure you a precision partnership of IBM equipment and supplies. By insisting on IBM punched cards, you can be sure of securing the precision engineering so essential to accurate and reliable data processing.

**IBM**<sup>®</sup> SUPPLIES

# KOH-I-NOOR

## Precision-Matched Instruments

Koh-I-Noor offers draftsmen an important new concept—a comprehensive line of instruments and accessories meticulously matched to achieve a new high in professional performance.

ADAPTO-  
CLUTCH  
LEAD  
HOLDER  
and  
EJECTOMATIC  
LEAD DISPENSER

Two Koh-I-Noor products designed to work together for greater convenience. Lead holder's non-slip clutch takes all 17 degrees of Koh-I-Noor lead. Ejectomatic Dispenser feeds lead to holder without need to touch it.

### RAPIDOGRAPH NON-CLOGGING "TECHNICAL" FOUNTAIN PEN

A smoothly performing ruling, lettering and tracing pen that uses India or regular ink with equal facility. A tremendously convenient, time-saving, reliable instrument. Fully guaranteed. In five precision line widths:



Write for descriptive literature.

by  
**KOH-I-NOOR**  
of course

Bloomsbury 4, New Jersey

For More Information Write No. 245  
on Inquiry Card—Page 32

## Office Equipment



A read-out form printer with a 12-decade capacity and an automatic form ejector has been developed by the **Electronics Division of Clary Corporation**, 408 Junipero St., San Gabriel, Calif. Typical applications for the new machine are automatic checkout data, logging instrumentation data, recording quality control reports, automatically recording inspection records and printing gummed labels and inspection tags.

Write No. 41 on Inquiry Card—Page 32



A new group of **all-purpose chairs** is now being offered by **Royal Metal Mfg. Co.**, One Park Avenue, N. Y. Available with either hydraulic or swivel rise action, the chairs feature Danish styling, molded foam rubber back and seat. The chairs come with either upholstered or solid walnut armrests.

Write No. 42 on Inquiry Card—Page 32

A new 12-page full color brochure on the advantages of using magnetic recording tape has been released by the **DeJur-Amsco Corporation**, 45-01 Northern Boulevard, Long Island City, N. Y. Entitled, "How To Measure Time With Tape," the booklet describes the many features of tape and compares them with those of the disc and belt stylus methods.

Write No. 44 on Inquiry Card—Page 32



A technique of applying removable and interchangeable **metal panels** to a rigid framework has been announced by **Royal Metal Manufacturing Company**, One Park Avenue, New York 16, N. Y. The new method provides a replacement feature which permits sides, top, drawer and door fronts to be chosen individually for color and finish and replaced at will in case of damage. The room furniture is built so that units may be combined into custom groupings of almost limitless variety.

Write No. 42 on Inquiry Card—Page 32



A new 10 key portable adding machine is being marketed by **R. C. Allen Business Machines, Inc.**, Grand Rapids, Mich. Some of the features include a motorized non-add key, motorized correction key, single and double spacing control, as well as single back space key.

Write No. 45 on Inquiry Card—Page 32

For More Information Write No. 246

on Inquiry Card—Page 32—>

PURCHASING



## Dazzling new **SPRINGHILL<sup>®</sup> BOND** is actually whiter than clean white chalk

—YET COSTS NO MORE THAN "OFF-WHITE" BONDS!

**H**OLD A SHEET of new Springhill Bond in your hand. Look at it. Feel it. Tear it. Fold it. You'll swear that this must be a premium-grade bond. *Only the price and the absence of a watermark say it isn't!*

Look at its whiteness. A well-known research lab proved that new Springhill Bond was *measurably whiter* than chalk, salt, even surgical cotton. Whiter than any other unwatermarked bond on the market!

But Springhill Bond is more than just white. It's level and uniform, too. And crisp. Just try to pick up a sheet without making a crackling noise!

Compare Springhill Bond for whiteness, finish, opacity, and "crackle." Once you do, you'll recommend it.

### Extremely printable

We insure excellent results every time by cutting a sample ream from every reel and having it tested on actual printing presses. Springhill Bond is made to order for offset and letterpress printing.

New Springhill Bond and Mimeograph are available in white and six colors in a complete range of stock sizes and weights. The Springhill line is also available in Duplicator and Ledger papers.



Look for this attractive new design. Handy "zip" openers on 8½ x 11 reams. All cartons polyethylene-lined to control humidity.

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## "I could kiss you" (she said...and she did!)

What brought on the buss for the boss? NU-KOTE, of course! Ever since he introduced his secretary to this original plastic base carbon paper, she's been getting first-to-last legibility, no-smudge copies, and one-weight, one-finish mastery of almost all copy jobs. Perfect for all typewriters, too! Boss' bonus: Great savings on Nu-Kote's 3 to 1 durability over ordinary carbons. Free sample? Just clip the coupon.

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**FREE SAMPLE!** For a free sample of NU-KOTE just mail this coupon attached to your company letterhead.

Dealer Sales Dept.  
Burroughs Corporation, Detroit 32, Michigan

Name \_\_\_\_\_

Firm \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ Zone \_\_\_\_\_ State \_\_\_\_\_

In Canada write Acme Carbon & Ribbon Company, Limited,  
Toronto 13, Ontario

P-30

For More Information Write No. 247 on Inquiry Card—Page 32

## Office Equipment



A portable electric heater standing 15" high is available from Edwin L. Wiegand Company, 7500 Thomas Boulevard, Pittsburgh 8, Pa. Featuring automatic temperature control, the new unit has an all-metal enclosed heating element to protect it against shock, moisture and breakage. The heaters are also equipped with a seven foot cloth cord and the proper plug needed for wattage load and voltage.

Write No. 46 on Inquiry Card—Page 32

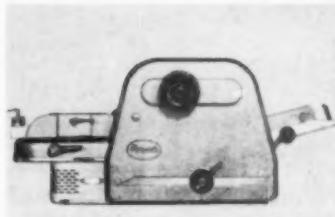


A newly-designed Semiautomatic Optical Mounter of the Filmsort Company, Pearl River, N. Y. combines motorized microfilm insertion with precision center line techniques. The operator aligns the center lines of the microfilm frame with those on the mounter screen. In addition, the operator checks the microfilmed data projected on the screen with the punched or posted data of the aperture card. Both film transport and film die travel are motorized. One push of a button advances the film die and applies the controlled pressure that seals the individual microfilm frame to the aperture card.

Write No. 47 on Inquiry Card—Page 32

Royal McBee Corporation, Port Chester, New York has issued a 10-page brochure on its new automatic Keysort System. The system is described in non-technical terms. The brochure illustrates how an original unit record can be coded for automatic processing with flexible low-cost machines. The system is adaptable to centralized or decentralized purchasing procedures in companies of all sizes.

Write No. 48 on Inquiry Card—Page 32



An all-electric spirit duplicator has been introduced by **Wolber Duplicator and Supply Co.**, 1201 Cortland St., Chicago, Ill. Features of the machine include an automatic shut-off when the last sheet is duplicated; a signal that glows while current is flowing; and a control lever that stops fluid flow and releases roller pressure in one operation.

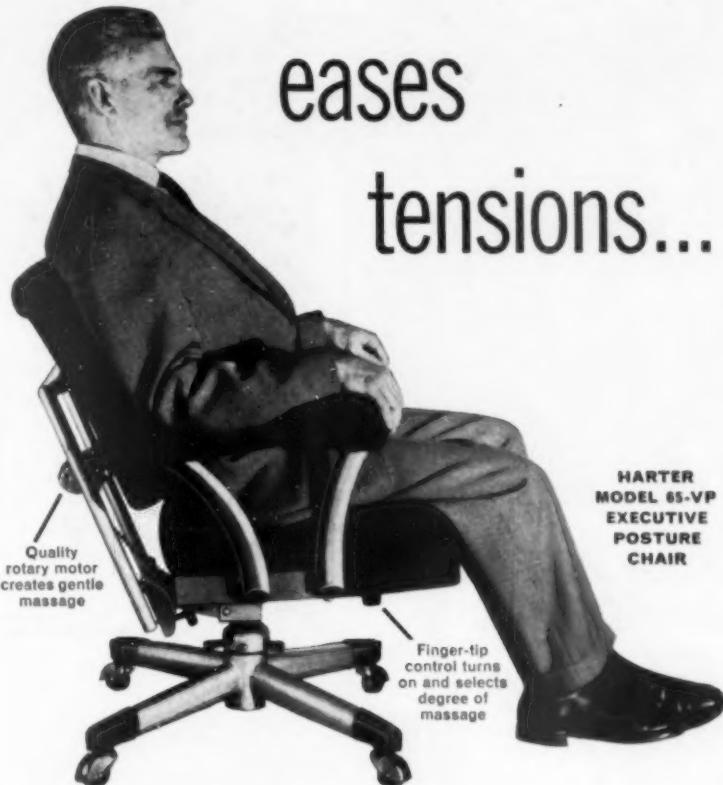
Write No. 49 on Inquiry Card—Page 32



A new line of chairs featuring extra-heavy square aluminum tubing, foam rubber cushions and vinyl-coated cloth upholstery are being marketed by **Emeco Corporation**, Hanover, Pa. The new line includes five chairs, all virtually tiltproof because of the ball-and-socket glides which remain flush with the floor.

Write No. 50 on Inquiry Card—Page 32

## NEW RELAXING MASSAGE IN THE PRESIDENT'S CHAIR



relaxes you...refreshes you

Tensions... decisions... deadlines got you all tied up in knots? Just lean back in a Harter 65-VP Executive Chair, select the Swedish massage action you prefer and relax. Cool, extra-deep foam rubber cushions in seat back and arms transmit massage, gently relieving tensions. In a few minutes return to your work refreshed and alert. The bigger your job, the more you'll appreciate this chair.

With the massage turned off, you have the aristocrat of all executive posture chairs. Five controls fit the 65-VP to you. Nothing has been spared to make the Harter 65-VP the finest. Write for illustrated literature.



Massage action  
also available in  
the Harter chairs  
on the left.  
Each is a top value  
in its price range.

HARTER CORPORATION • 529 Prairie • Sturgis, Michigan



For More Information Write No. 248 on Inquiry Card—Page 32



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ERASING...**  
**Take your  
Pick!**

**KLENZO-33**  
WITH AND WITHOUT BRUSH

Famous Klenzo quality in convenient wood-casing. Sharpens to "needle point" for ballpoint, typewriter and ink work.

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The standard for erasing. Paper wrapped to permit quick, economical repointing.

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AT BETTER STATIONERS EVERYWHERE

Send 10c for twin samples naming this publication.



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PENCIL COMPANY  
BETHAYRES, PA.

For More Information Write No. 249  
on Inquiry Card—Page 32

**Office Equipment**



A new spirit vapor carbon was announced recently by The Carter's Ink Company, Cambridge, Mass. It is available in brilliant blue, purple, or black and each master unit yields up to 200 copies. A clean spirit vapor carbon prevents stains on hands, paper and clothing. Called "Ultra White Glove" a free sample may be obtained from the manufacturer.

Write No. 51 on Inquiry Card—Page 32



The Globe-Wernicke Co., Cincinnati 12, Ohio now has available a new lower height "H" leg for use under the auxiliary top. This makes it possible to set the auxiliary desk at a business machine height of 26½". Made of square metal tubing the leg is equipped with adjustable slides.

Write No. 52 on Inquiry Card—Page 32



A machine that makes large size prints—up to 18 x 24 inches—of engineering drawings and other

detailed documents from microfilm, completely automatically, has been announced by Minnesota Mining and Manufacturing Company. The unit accommodates 35mm microfilm in aperture cards or tabulating card sizes. Cards are inserted in the machine, a button is pressed and the enlarged copy appears in 15 seconds or less. A table-top unit, it stands 32" high x 31" wide x 36" deep and operates on regular room current. Write No. 53 on Inquiry Card—Page 32



A machine that simultaneously punches tape or cards as a by-product of regular accounting jobs is now being offered by the Monroe Calculating Machine Company, Orange, N. J. A motion check is built into the tape punch to be certain that every figure coded is recorded on the tape. There is also an automatic parity check. Any malfunction of the tape punch touches off a red signal on the control panel and the accounting machine automatically becomes inoperative.

Write No. 54 on Inquiry Card—Page 32



A copyholder for secretaries and typists has been announced by Remington Rand Division of Sperry Rand Corporation. The unit, extends just a few inches above the typewriter. When not in use it folds over the machine and can be tucked into the desk at night. Available in 16" or 25" size, it comes in six colors.

Write No. 55 on Inquiry Card—Page 32



A new light box can be used and stored in the standard 12 inch desk drawer. Called the Glow-Box, the unit is designed to illuminate standard 8½ x 11 inch drawings, graphs, charts or maps. It can also be used for comparing X-Ray films, examining transparencies and working with both colored and translucent specimens. A white Plexiglas cover plate provides shatter-resistance and even diffusion of light across the surface. The unit is available from the manufacturer, **Instruments for Research and Industry, 108 Franklin Avenue, Cheltenham, Pa.**

Write No. 56 on Inquiry Card—Page 32

The Supplies Division of I.B.M. has announced that punched card sets are available with a carbonless paper. The new paper, developed by Oxford Paper Company, is pressure-sensitive; no chemical action is involved. Weight of the paper is comparable to 15 lb. bond. When used in a card set, it has less bulk than an equivalent carbonized set. Shelf life of the paper is one year. Write No. 57 on Inquiry Card—Page 32

PURCHASING



**"He Knows You're a Visitor."**

MAY 11, 1959

*This portfolio shows you  
how to benefit from modular furniture—*



*If you want your office  
geared to future operations  
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Modulettes open the way to new frontiers in office furniture arrangements—and office efficiency.

Peerless Modulettes are numerous modular units that can be combined and arranged in seemingly endless groupings. Office furniture groups that can assume *your* individual system of functional operation.

Valuable space can be conserved. Office operation costs can be reduced.

For More Information Write No. 250 on Inquiry Card—Page 32

## Association News

### N.A.P.A. Announces Convention Program

THE National Association of Purchasing Agents recently announced the participants for the 1959 convention program. To be held at the Waldorf-Astoria in New York on June 14, 15, 16 and 17, the program shows promise of making this one of the outstanding conventions.

Mark W. Cresap, Jr., president of Westinghouse Electric Corporation will be the keynote speaker on Monday morning. The opening address will be followed by a panel discussion devoted to materials management. E. F. Andrews, Allegheny Ludlum Steel Corp. will be the moderator, assisted by A. M. Kennedy, Jr. of Westinghouse Electric Corporation and George A. Renard, former executive-secretary of the N.A.P.A.

W. Evert Welch, Minneapolis-Honeywell Regulator Company will complete the first morning's program with a talk on "Practical Tools For Better Inventory Decisions."

Monday afternoon will be entirely given over to various committee meetings. An important session will be conducted by the National Committee on Steel; Reverend William T. Hogan, S. J., director of the industrial economics program at Fordham University will discuss, "Labor In The Steel Industry."

The general session on Tuesday will cover the very popular subject of value analysis and standardization. Edward Walther of Management Development Associates, New York will also talk on "Survival of the Purchasing Agent In The Space Age."

Wednesday is the day for economics. Two prominent economists from the McGraw-Hill Publishing Company will talk on "The American Economy In The Space Age." A panel of leading economists will cover, "Today's Domestic and World Economy."



T. A. Corcoran, The Courier-Journal—The Louisville Times, Louisville, Ky.



F. Victor Hanaway, Talon, Inc., Meadville, Pa.



Gordon Burt Affleck, president of National Association of Purchasing Agents.



T. W. Russell, Jr., American Brake Shoe Company, New York, N.Y.



George A. Renard, Journal of Commerce, New York, N.Y.



William K. Hora, First National City Bank of New York, New York, N.Y.

For More Information Write No. 251  
on Inquiry Card—Page 32-  
PURCHASING



on the *high-style* model of

**GM's no. 1 car—the beautiful Chevrolet Impala**

Yes, every one of these 48 precisely-contoured *stainless steel* parts is used on the exterior body trim of the 1959 Chevrolet *Impala*. Here you see beauty, brilliance and strength that resist weather and wear without care for the life of the car—selling and re-selling at every turn. • We are proud of Superior Stainless Strip Steel's applications in the fine automobiles of General Motors. Can we serve your stainless strip needs?



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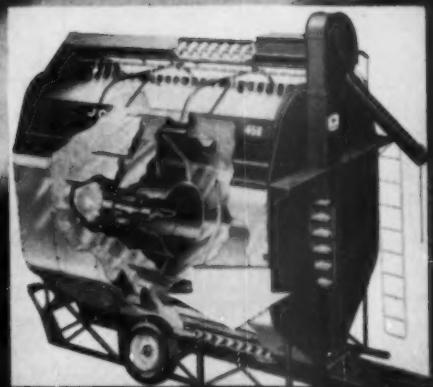
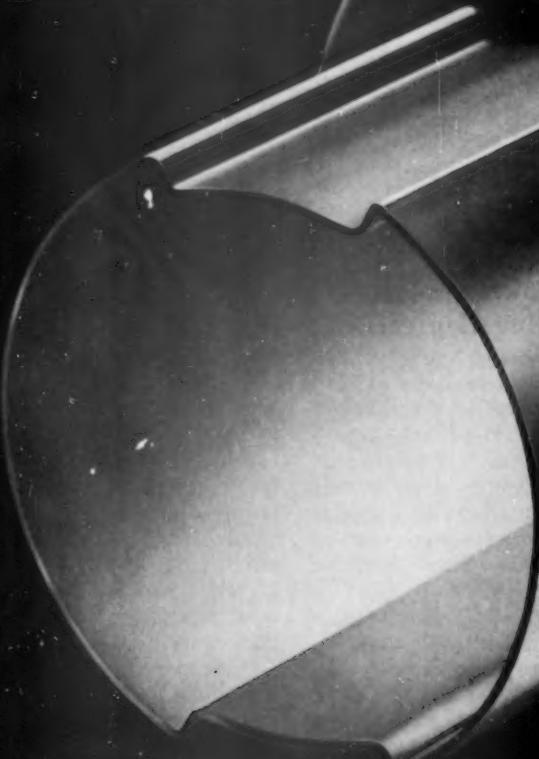
Are you open-minded about methods of permanent fastening? If so, it will pay you to call in your nearby Thomson Fastening Man. Ask him to look at your new-product sketches or old-product assembly lines. Chances are, he can tell on the spot whether you can speed production or cut costs with time-tested automatic positioning and fastening techniques. If not, he'll pass your problem, drawings or samples along to his home-office engineers who know when riveting beats stapling, welding, cementing and other permanent fastening methods.

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PURCHASING

# AGAIN-



## Revere helped "fit the metal to the job"

... AIDING JOHN DEERE IN DESIGNING ITS FIRST GRAIN DRYER

The greatest bugaboo the farmer has to contend with in harvesting grain is the weather. If it is bad and the grain passes its peak of yield he loses time and money. The new JOHN DEERE 458 Grain Dryer makes it possible for the farmer to harvest when his grain reaches peak yield.

The Dryer was designed from the ground up to be superior in every respect yet competitive in price. In order to assure even feeding of the grain from the start, two metering rolls at the base of the machine are used (Cutaway above shows position of rolls in machine while large illustration is section of the Revere Welded Steel Tubing used for the 44 $\frac{1}{4}$ " long rolls).

In designing this Dryer JOHN DEERE Engineers considered various kinds of materials, finally specifying Revere Welded Steel Tubing, cold rolled 4 $\frac{1}{2}$ " OD x .065" wall, in the special grooved shape you see above, as being the best material available. Although difficult to fabricate, by most mills, Revere encountered no problems because of its vast experience in producing welded steel tubing in various shapes, sizes and gauges... from  $\frac{1}{4}$ " to 5" OD round, with walls from .028" to .250" depending on the size.

In fact it was the availability of the tube, plus the experience of making it in large sizes that decided DEERE Engineers to specify Revere. Performance of the tube, JOHN DEERE tells us, has been highly satisfactory.

What are *your* steel tubing needs? More than likely Revere can help you too. It costs nothing to inquire.

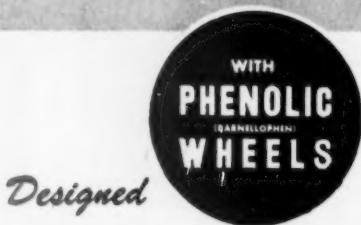


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**Tough**  
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TO SOLVE YOUR PROBLEMS

SPECIAL FEATURES

- High impact strength
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- No rusting or corroding
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Look in the  
YELLOW PAGES

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36 NORTH CLINTON STREET, CHICAGO 6, ILLINOIS

For More Information Write No. 253  
on Inquiry Card—Page 32

## Association News



Matt Karpan, president of Central Iowa Association

### Central Iowa Underwrites Purchasing Conference

The Purchasing Agents Association of Central Iowa did all they could to make it possible for everyone to attend the annual "Drake Purchasing Conference."

One of the biggest steps they took was to underwrite a portion of the conference expenses by donating \$1000. This permitted the registration fee to be \$5.00 instead of a much higher amount.

Partially as a result of this generous gesture and partially because of the outstanding program the conference was a huge success.

A one-day affair the program included the following: C. W. McVicar, director of purchasing & traffic, Rockwell Manufacturing Co. spoke on "The Value of a Purchasing Manual to Purchasing and Management; Donald E. Fink, supervisor, value analysis, Hot Point Co. discussed "Value Analysis"; W. M. Bergemann, director of purchases, Falk Corporation, talked on the subject "Scientific Approach to Purchasing"; and F. C. Walters of Esso Standard Oil Company rounded out the meeting with a discussion of "Data Processing as a Purchasing Tool."

A recent meeting of the association began with a tour of the Rath Packing Company plant in Waterloo, Iowa. In the afternoon the group went through the Waterloo Corrugated Box Company and Waterloo Valve Spring Compressor plants.

The evening portion of the meeting was devoted to a fine talk by Arch McFarland, a member of the Iowa legislature for 44 years.

### New England Salesmen Join P.A.'s For Dinner

The New England Purchasing Agents Association recently held a joint meeting with the Boston Sales Executives Club. The program was devoted to a spirited discussion of some of the mutual problems of salesmen and purchasing agents. Joint committees of the two associations planned the program.

Moderating the panel to "Evaluate Sales-Purchasing Problems" was E. P. Brooks, dean of the School of Industrial Management, M.I.T. Representing the sales point of view were: Andrew E. Bubser, International Salt Company; Herbert W. Jarvis, United Shoe Machinery Corp.; and Herbert C. Williamson, The General Fireproofing Company.

And representing purchasing were: Daniel G. Donovan, director of purchases, Pepperell Manufacturing Co.; Louis A. Little, purchasing agent, Simonds Saw and Steel Co.; and Robert S. Mulle, purchasing agent, Harvard University.

Prior to the general meeting the Electronic Buyers met for a demonstration of Audio Reproduction equipment. George Jumes, purchasing agent of H. H. Scott, Inc. presented Morley Kahn who displayed hi-fi, stereo, binaural and monophonic equipment and told how recent advances in audio control have been made possible by electronics research.

### Economist Speaks At Twin City Assn.

The Twin City Association of Purchasing Agents invited Arthur Upgren, Bigelow Economist of Macalester College to speak at a recent meeting. An outstanding economist, Mr. Upgren gave the members many helpful hints on the outlook of the economy.

Wayne Hamlett, Continental Machines, Inc., program chairman also had Jim Loeffler, Cargill, Inc. speak at the pre-meeting forum. Mr. Loeffler spoke on the provocative subject, "Reciprocity."

Bill Stevenson of the State of Minnesota was chairman of the month.

*Automatic Transmission Manufacturer Specifies*

# OSTUCO

*Seamless Tubing*

# FOR PRECISION ANNEALING

Annealing furnace at the Shelby mill. Ostuco tubing can be bright or soft annealed, stress relieved, normalized or heat treated.

As a leading producer of quality transmission components, we can't leave anything to chance. Our design requirements, materials specifications and manufacturing processes are under the most stringent quality control standards. And we demand as much of our vendors.

"One sure way we have found to eliminate the unpredictable is to specify Ostuco Seamless Tubing. We know from experience we can rely on

the precision annealing and unvarying quality of Ostuco tubing that slashes reject rates, helps us produce parts in quantity for profit . . . ."

If you want to eliminate the unpredictable in your own plant, then it's time you called your local Ohio Seamless representative. He's listed in the Yellow Pages. Or contact the plant at *Shelby, Ohio — Birthplace of the Seamless Steel Tube Industry in America*.

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## OHIO SEAMLESS TUBE DIVISION

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*Seamless and Electric Resistance Welded Steel Tubing • Fabricating and Forging*

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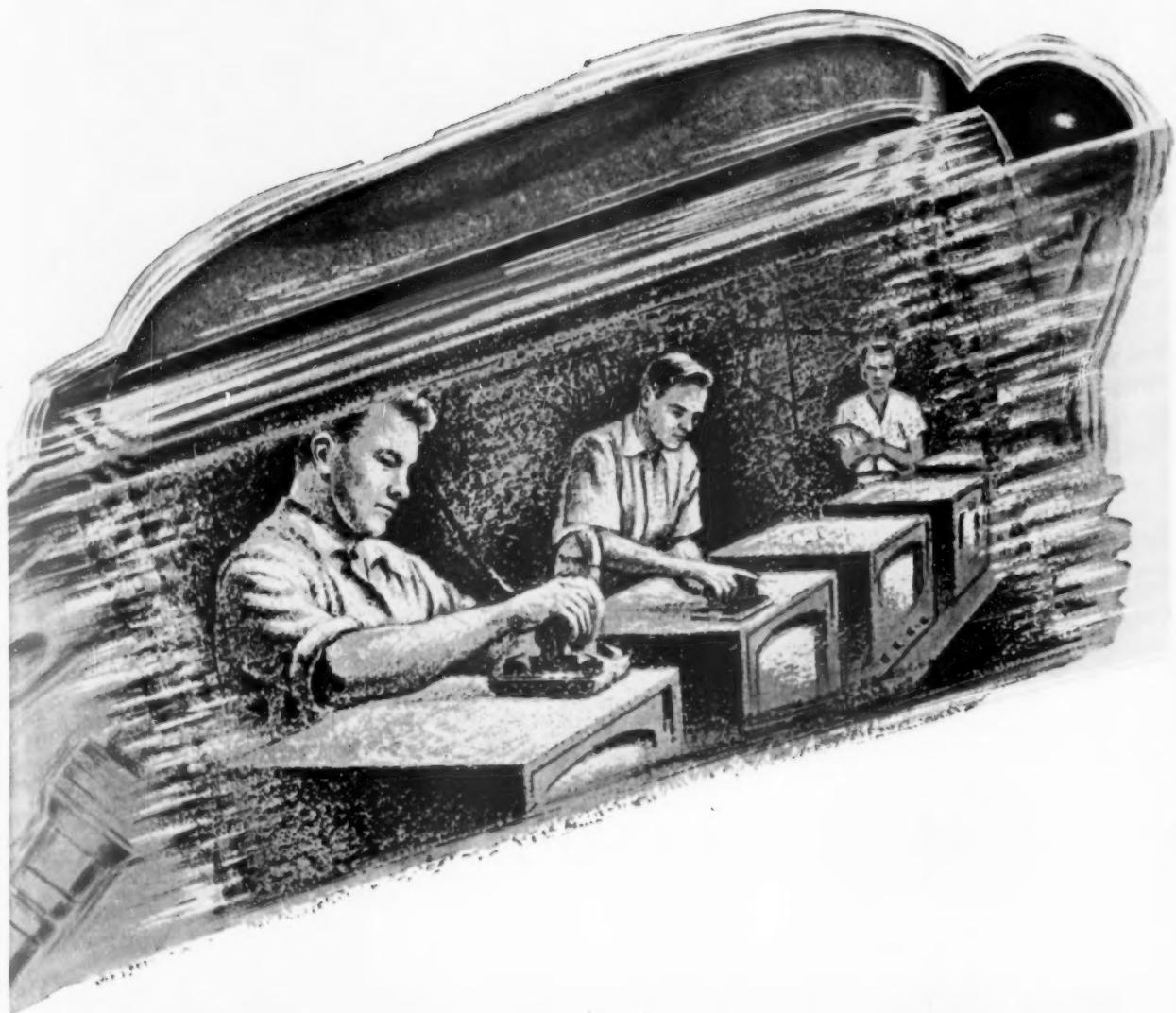
MAY 11, 1959

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It takes a lot of Grit



This "jitterbug"



to keep industry growing

# performs in factories

Orbital sanding machines are widely used in furniture factories, by metal fabricators, and in automotive shops — wherever product surfaces are slick finished or polished.

The combination of motion and the cutting action of the coated abrasive produces the satin finish on fine furniture . . . the glisten and sparkle on your automobile or toaster. And American ingenuity continues to put the "jitterbug" to work on many odd tasks — from smoothing taped wallboard joints to removing paint.

Product and methods research has brought leadership in coated abrasives to Behr-Manning — and it has brought increased production and lower costs to industry and their customers. That is why Behr-Manning supplies an extraordinary variety of coated abrasives tailored to fit practically every standard machine and need — for industry and the home craftsmen.

*In one year, Behr-Manning makes more than 180,000,000 sheets of sandpaper and over 20,000,000 abrasive belts — plus millions of discs, rolls, and other coated abrasive specialties.*



*The sign of the Bear means a better product . . . and better production*

## BEHR-MANNING CO.

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BEHR-MANNING PRODUCTS: Coated Abrasives

• Sharpening Stones

• Pressure-Sensitive Tapes

NORTON PRODUCTS: Abrasives • Grinding Wheels • Grinding Machines • Refractories • Electrochemicals

In Canada: Behr-Manning (Canada) Ltd., Brantford

For Export: Norton Behr-Manning Overseas Inc., Troy, N. Y., U.S.A.



For More Information Write No. 255 on Inquiry Card—Page 32

## Association News

### Eastern N.Y. Group Visits Paper Plant

The Purchasing Agents Association of Eastern New York recently visited the Marinette Paper Company of Fort Edward, New York. Harry Reese, purchasing agent for Marinette arranged for the special, guided tour of the plant.

The plant visitation was followed by the regular meeting at the Hotel Queensbury in Glens Falls, N. Y. Eugene L. Hunt, president of the association and purchasing agent of Albany Castings Company welcomed the members and guests and introduced the feature speaker, Richard Boss, technical control engineer of the Marinette Paper Co. Mr. Boss' talk was devoted to the very interesting subject of paper making.

nestly and consistently to achieve original chapter goals. The president of the Institute has appointed a special committee of the Board composed of John F. Ward, city purchasing agent, Chicago, Illinois, chairman; Otto R. Winter, city purchasing agent, New Britain, Connecticut; John W. Huffman, director of general services, Richmond, Virginia; B. L. Gill, city purchasing agent, Madison, Wisconsin; Ernest J. Brewer, city purchasing agent, Atlanta, Georgia; and Albert T. Tripp, city purchasing agent, San Antonio, Texas to study and recommend: (1) a suitable substitute for the present chapter structure and (2) methods and procedures by which the facilities and services of the Institute may be increasingly available to small units of government."

### P.A. Gives His Views To Salesmen

J. V. Collins, Jr., purchasing agent for Freeway Washer & Stamping Co. of Cleveland discussed, "A Purchasing Agent's View of Salesmen" before an electrical distributors' conference at the G-E Lighting Institute, Nela Park recently.

Looking back over his 22 years in purchasing, Mr. Collins was amazed and disturbed that there are so many uninformed salesmen. "They don't know the product they sell. Why companies permit so many 'babbling idiots' to represent them" is a question that Mr. Collins has been asking for a long time.

Mr. Collins admonished the salesmen to know the companies they are trying to sell. "My company," he said, "does not make washing machines. However, because of our name, a good many salesmen waste their time and ours on the assumption that we do."

"The really good salesman is a treasure," he concluded. "If he sells lamps to the plant that has a vibration problem he tells about rough service lamps. Better deal for him, better deal for the buyer. But for years we had a lot of lamp troubles before we got a man who discovered our real need and got us the product to correct it."

For More Information Write No. 257  
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PURCHASING



## SEE YOUR CAPEWELL DISTRIBUTOR

for  
hand hack saws  
power hack saws  
hole saws  
band saws  
hammers  
ground flat stock  
and for quick  
dependable service  
on all your  
industrial needs



THE CAPEWELL MFG. CO.  
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**HYATT**  
KEEPS QUALITY CONSTANT  
IN EVERY BEARING!

The unwavering accuracy of precision equipment allows pinpoint gauging and rigid quality control of every HYATT Hy-Roll produced. This, with long-respected HYATT craftsmanship, has made possible the manufacture of custom-quality bearings in mass-production quantity. *For maximum performance per bearing dollar, insist on . . .*

**HYATT<sup>HY-ROLL BEARINGS</sup>**  
FOR MODERN INDUSTRY  
HYATT BEARINGS DIVISION • GENERAL MOTORS CORPORATION • HARRISON, NEW JERSEY

*Available through United Motors System and its Independent Bearing Distributors*

**NO BEARINGS** carry radial loads like cylindrical bearings . . .  
and **NOBODY** knows them like **HYATT**

# A DANA EXCLUSIVE...

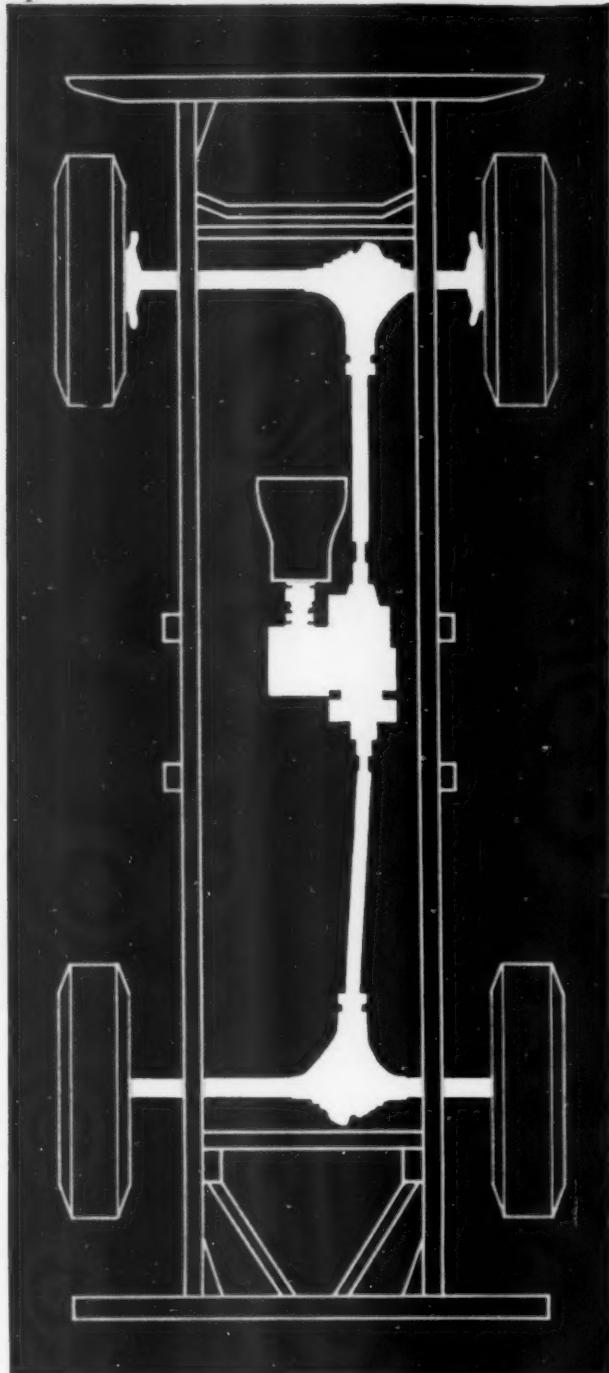
## Complete four- wheel drive assemblies

**ONE PURCHASE ORDER** is all you require for a complete four-wheel drive assembly . . . when you order from Dana. Everything is included . . . front and rear driving axles, transfer case, propeller shafts, and universal joints.

**MINIMUM TOOLING COSTS.** Spicer design gives you special four-wheel drive axles at close to mass-production prices. You save because the intricate carrier assembly is a self-contained unit . . . the same one that's produced by the thousands for Spicer rear axles.

**ADAPTED TO HUNDREDS OF USES.** Hundreds of low-cost variations are possible with the Spicer design. You have a choice of wheel treads, axle lengths and spring seat arrangements suited to loads from 2800 to 7500 lbs. . . . with either Cardan type or constant-velocity wheel joints.

**DEPENDABLE** Spicer front drive axles have been proved by over a quarter-century of use in both civilian and military vehicles.



**DANA CORPORATION • Toledo 1, Ohio**

**DANA PRODUCTS Serve Many Fields:**

**AUTOMOTIVE:** Transmissions, Universal Joints, Propeller Shafts, Axles, Powr-Lok Differentials, Torque Converters, Gear Boxes, Power Take-Offs, Power Take-Off Joints, Clutches, Frames, Forgings, Stampings.

**INDUSTRIAL VEHICLES AND EQUIPMENT:** Transmissions, Universal Joints, Propeller Shafts, Axles, Gear Boxes, Clutches, Forgings, Stampings.

**AVIATION:** Universal Joints, Propeller Shafts, Axles, Gears, Forgings, Stampings.

**RAILROAD:** Transmissions, Universal Joints, Propeller Shafts, Generator Drives, Rail Car Drives, Pressed Steel Parts, Traction Motor Drives, Forgings, Stampings.

**AGRICULTURE:** Universal Joints, Propeller Shafts, Axles, Power Take-Offs, Power Take-Off Joints, Clutches, Forgings, Stampings.

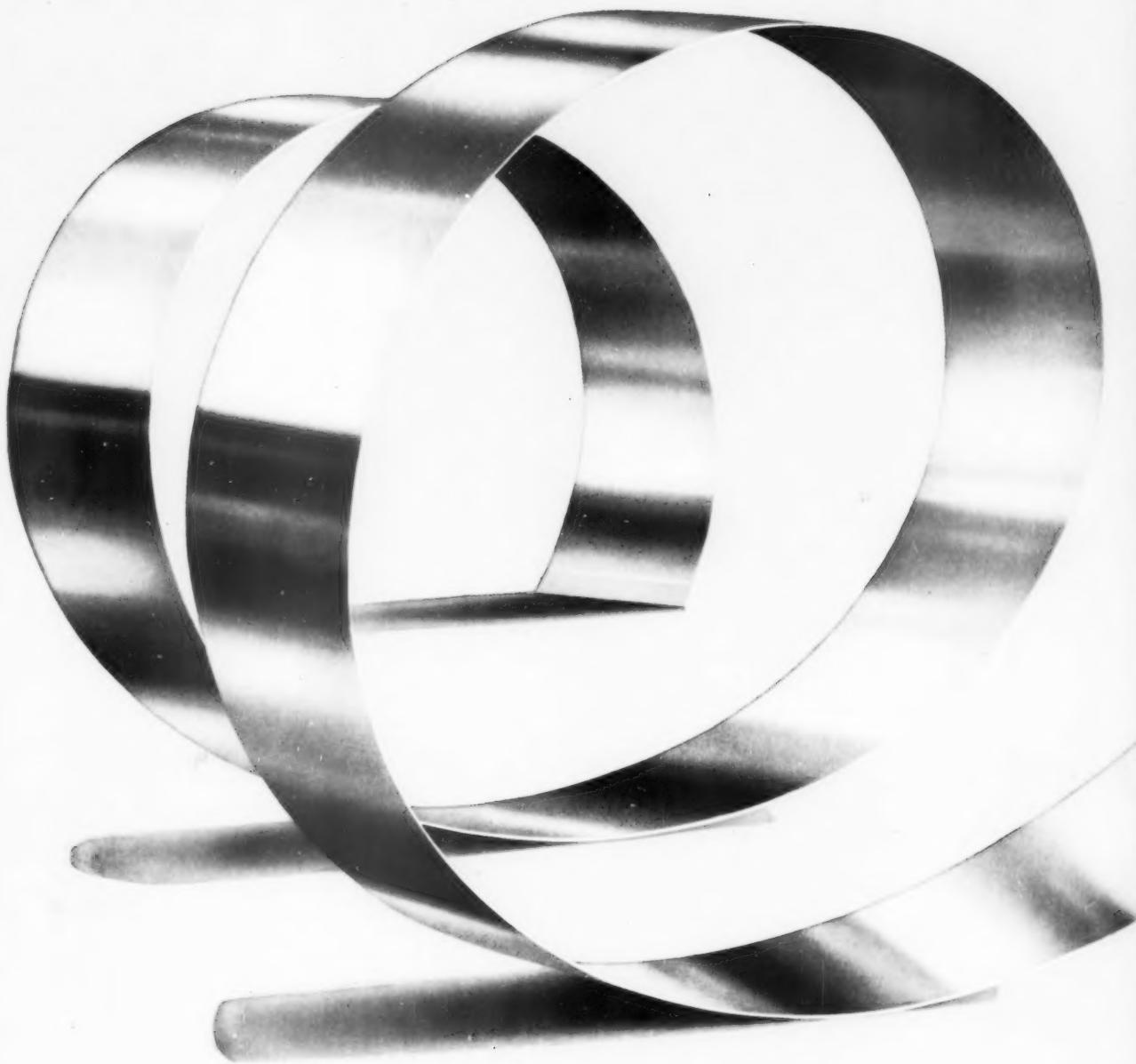
**MARINE:** Universal Joints, Propeller Shafts, Gear Boxes, Forgings, Stampings.

Many of these products manufactured in Canada by Hayes Steel Products Limited, Merrittton, Ontario.

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PURCHASING





## Crucible stainless matches your high standards

Coil after coil of Crucible stainless gleams with unsurpassed lustre because it is precision-rolled on modern mills. Furthermore, Crucible maintains uniform qualities by methodically checking each heat — and ensures precise gauge with electronic measuring controls. For stainless in all gauges down to .010" and in all strip widths, call or write: Crucible Steel Company of America, The Oliver Building, Mellon Square, Pittsburgh 22, Pa.

**CRUCIBLE STEEL COMPANY OF AMERICA**

CANADIAN DISTRIBUTOR — RAILWAY AND POWER ENGINEERING CORP., LTD.

# HOW

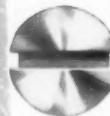
*to know you're  
getting the quality  
you want*



*Look  
here*



at the Phillips recess developed by American—for consistent depth and dimension. Without these, both fasteners and your product are damaged by cam-out, burring and distortion. Those costs come out of your profits. American gives you this mark of quality because its dies are designed to maintain this quality at the end of the run as well as the beginning.



*Look  
here*



at slotted fasteners that are cut clean and true to the head size. Poor slots give you poor driver engagement . . . take longer to drive, cost more in labor . . . and it all comes out of your profits. And remember to check the slots at the end of the run as well as the beginning, for only quality equipment and attention to detail can give you consistent quality . . . which you get from American.

**Profit  
Improvement  
Program**

*Quality fasteners cost  
more to produce . . . im-  
prove your profits when  
used!*

*Buy here*

**American** 

Willimantic, Conn. • Detroit, Mich. • Chicago, Ill.  
For More Information Write No. 260  
on Inquiry Card—Page 32

## Finger of Suspicion

(Continued from page 81)

**2. Establish a definite code of conduct for your department, make it clear to all concerned, and above all stick to it.** If you think there's no problem, act as if there is no problem. If you think there should be a limit on the value of gifts or entertainment your people can accept, define the limit and see that it is observed. If the rule is no gifts whatever—make it stick at just that, setting the highest example yourself.

Whatever the rule—and certainly no standard set of rules can be established for all companies or all situations—the crying need is for clarity, consistency, and a single standard of morality for everyone from the top down. In announcing a policy, for example, it's not enough to put a paragraph in the manual then never look at it again. It must be brought regularly to the attention of buyers and suppliers. Both are often reluctant to report instances of attempted dishonesty or corruption—particularly suppliers. You must make clear to them that they will not suffer if they adhere to the rules that you have established.

### **It All Depends on Us**

We have talked about reputations and responsibilities, about rules and regulations, about our obligations to foster public confidence in ourselves and our profession. In the end, all these depend on the individual, i.e. on each one of us. You may feel that there's a lot of injustice in what people think and say about business and about purchasing. There is. But we'll never change it until we start at the beginning and make sure our personal house is in as good order as we'd like people to think it is. In this respect I think no one has so neatly summed up the basic problem as Stuart Heinritz did in a recent editorial [PURCHASING, Sept. 1, 1958, p. 53]:

"We have never held the censorship of the acts and motives of others is any part of the purchasing responsibility. We have consistently maintained that it is a purchasing agent's duty to him-

self, his company, and his profession, to conduct his office in a manner that needs no ethical justification because it is above the taint of suspicion.

"Let us now add to this credo the belief that a good example can be just as potent and influential as a bad one—provided that it is sincerely and positively practiced, that it permeates an entire department, and that it admits of no compromise with the highest standards. Call this puritanical if you will. It is the only way.

"If enough purchasing men have the guts to take this stand, it will do much to halt the present deplorable trend and restore integrity and public confidence to business. Then we shall indeed have a cycle instead of a trend—a cycle that is at the turning point toward higher business ethics and morality."

## Expediting

(Continued from page 86)

would like to work with the supplier's production superintendent to see what could be done to advance the delivery time. Care was taken not to ask the president to commit himself or even interest himself in the details. The supplier was quick to express his desire to assist.

From talking to the production superintendent, the expeditor learned that the supplier's production schedule was filled to capacity. There had already been a full month's delay in processing this order, because engineering studies had to be made at a different unit that was only in the early stages of engineering for production.

The expeditor noted that as he was talking to the production superintendent, a number of phone calls attempting to expedite orders were received and courteously answered—but no improvement of delivery dates was promised. This tended to confirm the statement that the production schedule was well filled. To complicate the matter, certain government orders with priorities also occupied the production schedule.

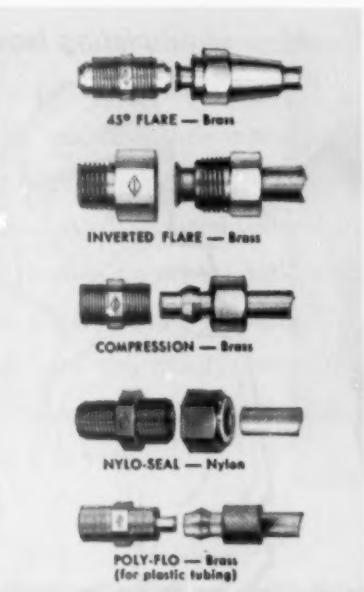
The expeditor's courteous urgency paid off, however. The sup-

(Please turn to page 176)

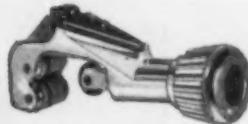
# IMPERIAL

## Engineering and Data File

ENGINEERED TUBE FITTINGS — VALVES — TUBING TOOLS



Avoid installing hazards  
into tubing systems

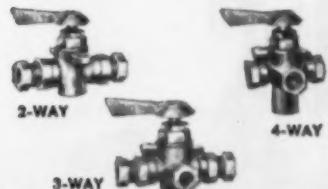


The angle of the cutting blade and the precision feed mechanism of Imperial Tube Cutters assure burr-free, right-angle cuts. They eliminate work hardening, hairline cracks on hard tubing and carry their own spare cutting wheel.

Flaring tools by Imperial leave the tubing wall a uniform thickness for the entire flare face. Hard chrome flaring cones provide low friction operation and a polished flare. Tools for flaring all metals include 37°, 45° and double flare types.

Imperial Blue Dot Benders end tube flattening that chokes, delays or starves flow . . . eliminate stress points. Types for bending soft or hard drawn copper, aluminum, steel and stainless steel tubing are readily available from your Industrial Distributor's stocks.

Write for Bulletin 3088



### Distribution problems solved with Hi-Duty 2, 3 and 4-way valves

Imperial Hi-Duty valves offer maximum protection against leakage, assured by closed bottom, seal on top of valve and "O" ring seal on stem.

And they're full flow. Passages are equivalent to the I.D. of the tube or pipe connected. Made from brass forgings and have long dryseal pipe threads.

Imperial also offers needle, plug, toggle and diaphragm types — plus a revolutionary new line of space-saving 700-CS high-pressure, high-temperature needle valves with Hi-Seal tubing connections.

Write for Bulletin 3061 and Catalog 200

### New developments speed hose installations

Imperial low-pressure FN hose now available in 100-ft. lengths eliminates the need for numerous couplings. This rubber covered, rayon braid, non-skive hose is easier to assemble. Imperial also offers Freon Hose and Re-usable couplings for installing and servicing Freon 12 systems. For higher pressure applications choose Imperial single and double wire-braid hose with reusable couplings.

Write for Bulletin 3040



THE IMPERIAL BRASS MFG. CO.  
6300 W. Howard St., Chicago 48, Ill.  
In Canada: 18 Hook Ave., Toronto, Ontario

**IMPERIAL**

MAY 11, 1959

For More Information Write No. 261 on Inquiry Card—Page 32

CONTACT YOUR INDUSTRIAL  
DISTRIBUTOR OR WRITE TO:

THE IMPERIAL BRASS MFG. CO.  
Dept. P-39, 6300 W. Howard St.  
Chicago 48, Illinois

Please rush me: Bulletins  No. 3088  
 No. 3061  Cat. No. 200  No. 3040

Name \_\_\_\_\_

Title \_\_\_\_\_

Company \_\_\_\_\_

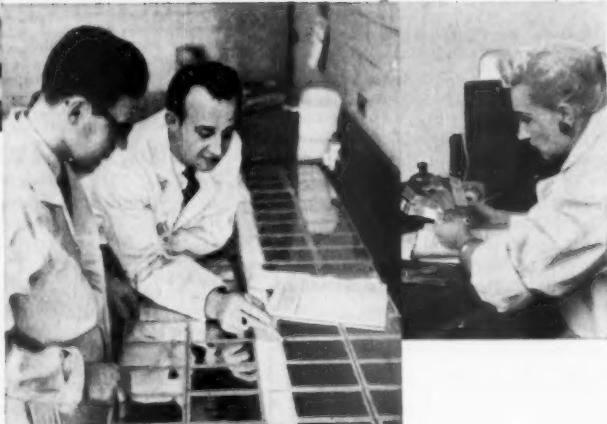
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*plating leadership \**



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*world's largest plating supplier*

**corporation**  
*detroit 11, michigan*

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...to increase sales and profits



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Exposure testing in progress for more than 20 years is but a single phase of Udylite's continuous four point research program carried on in collaboration with industry.

In addition to these tests others are conducted at an oceanside site and test panels are mounted on cars to travel salt-treated winter streets. Similar panels are subjected to every type of accelerated corrosion test for comparison with other findings.

This counterbalance of testing methods furnishes a wealth of authentic data to guide industry toward better products for better service.

For More Information Write No. 262 on Inquiry Card—Page 32

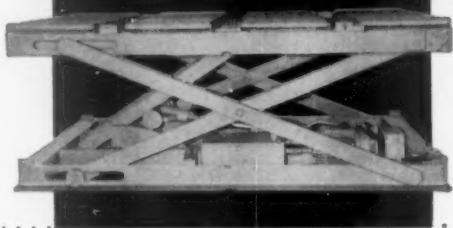
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the new



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load at center  
of lift—no stress  
on cross arms

- lower collapsed height, 9"
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- higher speed lifting and collapsing
- less oil volume
- less oil flow
- higher lift, 43"
- lifts 5,000 lbs. plus overload factor

The UPCO lift sells in economical price range yet offers features of more expensive machines. For free brochure and more details, fill out coupon below and mail to: United Products Co., 3001 N. Starr St., Tacoma 2, Washington.

UNITED PRODUCTS CO., 3001 North Starr Street, Tacoma 2, Wash.  
Send brochure on Upco Lift Table

Dept. PM-2

Name \_\_\_\_\_

Business Address \_\_\_\_\_

City \_\_\_\_\_ Zone \_\_\_\_\_ State \_\_\_\_\_

For More Information Write No. 263 on Inquiry Card—Page 32

Some Distributor Franchises  
still available. Write for full  
particulars.

UNITED PRODUCTS CO.  
(A Division of Meridian Corp.)  
3001 North Starr Street  
Tacoma 2, Washington

## Expediting

(Continued from page 172)

plier's purchasing agent scanned the order with the engineering department and immediately ordered stainless steel castings and other parts which had the longest lead times. The expeditor made four telephone calls over a period of four months to offer assistance in expediting items which the supplier might need and to keep before the production superintendent the urgency of the matter. The finished unit was received late in June—within the 12 month period—and the expanded plant was in operation by July 4th.

### What Was Learned

Two comments can be made about this expediting experience:

- (1) The president of the supplier firm remembered this expediting approach as being a highly constructive one. He voluntarily mentioned this to top management of the expeditor's company.
- (2) Other companies whose orders were in the supplier's plant at the same time and whose work was not expedited to the same degree, received deliveries much later. The cost of the personal visit to Utah proved to be small compared to the result of the efforts.

### The Results

A good expediting job by a purchasing agent gives these results:

- (1) His company saves time and money.
- (2) He expands his knowledge of his suppliers' plants, processing products, and personnel.
- (3) He increases his contact with his own plant personnel and his knowledge of their requirements and problems.
- (4) It increases purchasing's prestige within the company.

### CLASSIFIED ADVERTISEMENT

#### JOBBERS WANTED

We manufacture Kob-Kleen (ground corn cobs) for deburring, burnishing, polishing and soft grit blasting of metals; metal stamping absorbents, etc. Nationally advertised.

#### COEVAL, INC.

Dept. F, St. Joseph, Illinois

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PURCHASING

**ADVANCE**  
TO GREATER  
**EFFICIENCY**

**SEAMLESS**  
**FINGER GUARDS**  
**BETTER** THAN LEATHER  
FINGER GUARDS  
AT  
LESS  
COST

**ADVANCE GLOVES**



For assembling  
electrical spartin  
and handling small  
parts.

PAT.  
PENDING

**FOR GREATER SAFETY AND  
FREE FINGER MOVEMENT**

- Perfect Fit
- Greater Strength
- More Comfort
- Longer Wear
- Quality Plastic Lined With Perspiration Absorbent Cotton

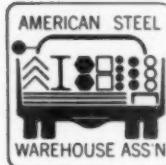
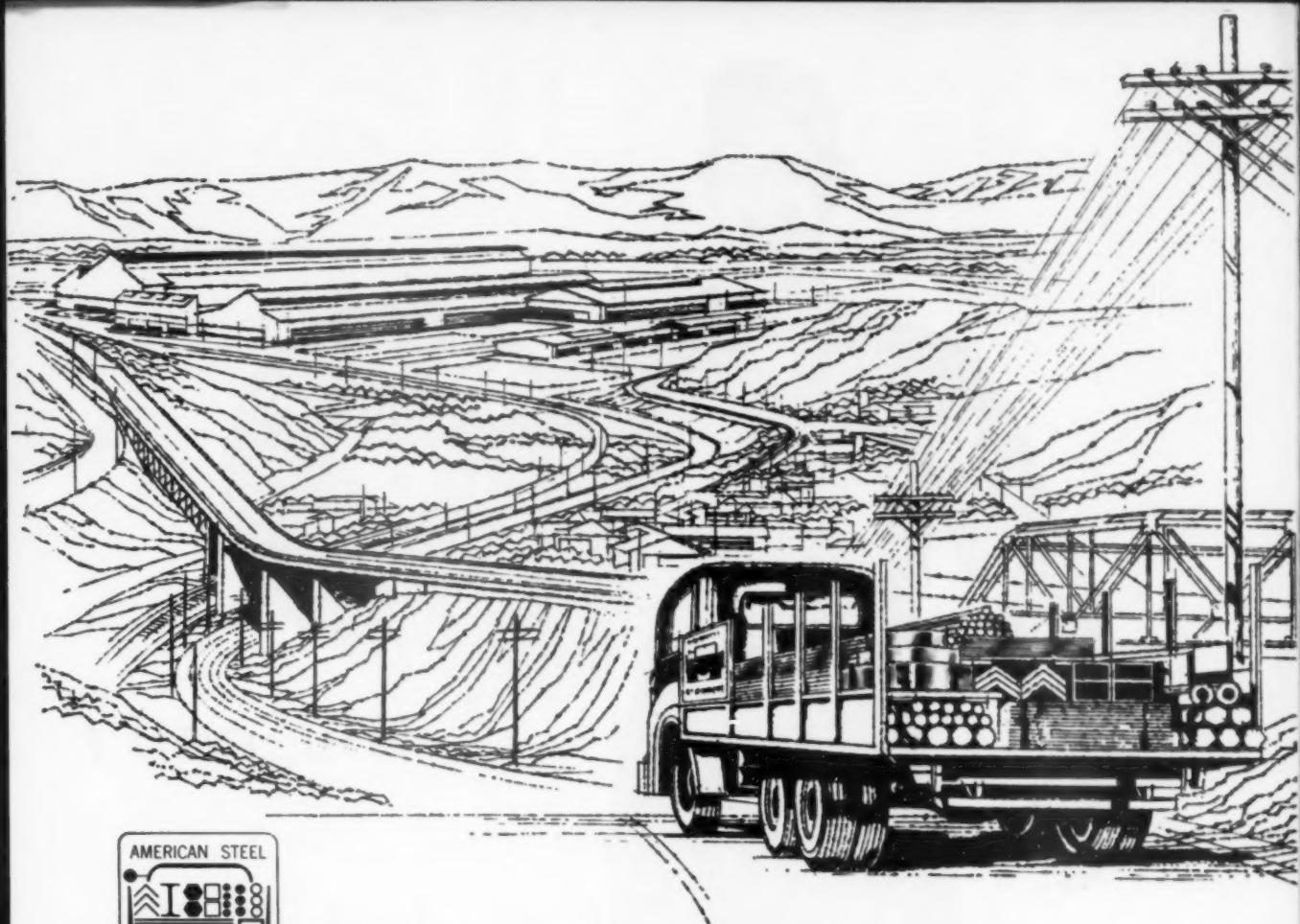
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938 W. LAFAYETTE BLVD., DETROIT 26, MICH.  
A better work glove for every purpose

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## Symbol for Savings

In back of this symbol is a unified campaign to make every steel service center more efficient and more productive, for you. Today's **Modern Steel Service Center** enables you to:

### **REDUCE CAPITAL EXPENDITURES**

You can operate with realistic inventories, freeing capital for more profitable purposes.

### **REDUCE OPERATING COSTS**

Stacking, sorting, storing, cutting—every operation on a piece of steel adds to operating costs. Modern Steel Service Centers eliminate many pre-production services, and do the needed ones economically because their equipment and specialized manpower are used full time.

### **REDUCE OVERHEAD COSTS**

Obsolescence, taxes, insurance, accounting, rent, heat, light—all overhead items which are too easily forgotten although they add to production costs. Modern Steel Service Centers eliminate these costs to you.

*Using a Modern Steel Service Center is Like  
Adding a Money-Making Department to Your Plant*



**STAINLESS**  
SHEET • STRIP • BAR • WIRE



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*You can't*

*bargain with safety!*

*Use a safe wire rope...use*  
**CF&I-WICKWIRE**

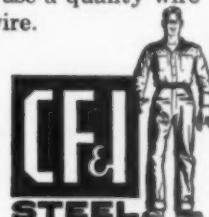
This giant steelman is the Image of CF&I—and of the many steel products produced by CF&I for every type of industrial use. He represents the quality controls that CF&I exercises during every step of manufacture—from ore to finished product.

Nowhere is this exacting attention to quality more rigorously followed than in the production of Wickwire Rope. That's because a quality rope is a safe rope. It helps the user eliminate losses

due to injuries or wrecked equipment that can result when a "bargain" rope fails.

Wickwire Ropes are available in a complete range of sizes, constructions and grades—including Wickwire Double Gray extra-improved plow steel rope for your extra high strength rope requirements.

For safety's sake, use a quality wire rope...buy Wickwire.



**WICKWIRE ROPE**  
THE COLORADO FUEL AND IRON CORPORATION

In the West: THE COLORADO FUEL AND IRON CORPORATION—Albuquerque • Billings • Boise • Butte • Denver • El Paso  
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MAY 11, 1959

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# Symbols of Service

to all metal-working  
industries

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The Morse "house emblem" and the NIDA seal are *double warranty* of the best you can get in quality and service.

For Morse-Franchised Distributors are like the tools they sell . . . tested and proven on their jobs . . . men of experience and responsibility who know how to get you top value for every dollar you spend on cutting tools.

So call him in today . . . *your* Morse-Franchised Distributor. You'll find him more and more of a business asset, the longer you do business with him.

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A Division of VAN NORMAN INDUSTRIES, INC.



# Morse

## CUTTING TOOLS



For More Information Write No. 268 on Inquiry Card—Page 32

MAY 11, 1959

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## Purchasing People

(Continued from page 57)

**Edmund C. Austin**, has been appointed to the newly created position of vice president—procurement for **The Fluor Corporation** Los Angeles, Calif. Mr. Austin, began his business career



**Edmund C. Austin**

in Los Angeles as a clerk in a subsidiary of Standard Oil Company of Calif. In 1935, he moved to that firm's purchasing department in San Francisco. He stayed there until 1939 when he joined The Arabian American Oil Company. While with Aramco he served in Dhahran, Saudi Arabia; New York and San Francisco. He left the firm in 1955 as manager, materials supply and as a member of the management committee. Prior to joining Fluor in January 1958, he was petroleum adviser and assistant general manager of the Canadian Bank of Commerce, in Toronto, Canada. From 1942 to 1944 he was loaned to the United States Army, Ordnance Department, and directed purchasing on the West Coast of the United States. In 1951 he was loaned, for six months, to the Petroleum Administration for Defense in Washington, D. C. where he was in charge of foreign materials.

Appointment of **James F. Boyle** as assistant purchasing agent has been announced by **The E. F. Hauserman Co.**, Cleveland, Ohio. Mr. Boyle was formerly with Abrasive Tool & Supply Co. of Cleveland as a salesman.

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Plant devoted  
exclusively to the  
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**Precision  
BALLS**

... the best—Strom combines 40 years' experience with the most modern methods and machinery to produce the world's finest balls.

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Pacific Coast Representative: R. J. SCHENK, 716 South Main Street, Santa Ana, California  
Southwestern Representative: E. E. GRAHAM & Co., 3701 Navigation Blvd., Houston 3, Texas  
Chicago Representative: ROBERT YOUNMANS, 6110 West 26th Street, Chicago 50, Illinois

For More Information Write No. 269 on Inquiry Card—Page 32



*longer fatigue life*



*greater corrosion  
resistance*



*less product  
incrustation*

## *now tests prove...CONTOUR-WELDED\** STAINLESS TUBING PROVIDES THESE IMPROVEMENTS *because* IT'S SMOOTHER INSIDE!

Recent tests of both seamless and welded full-finished tubing prove TRENTWELD® tubing—made by the exclusive *Contour-Weld* process—is smoother than tubing made by any other method.

It's smoother internally than seamless because it's formed from uniformly rolled strip steel whereas seamless is extruded from a billet.

It's smoother than other welded tubing

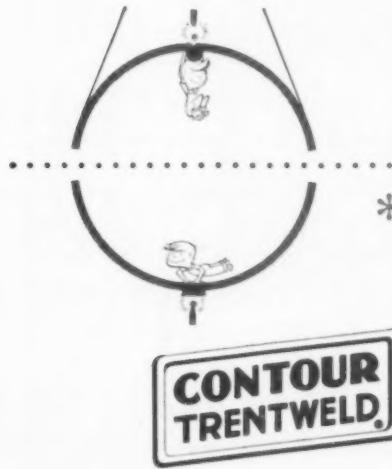
because *Contour-Welding*, Trent's patented process, virtually eliminates the weld bead on the inside surface.

Tests prove this smoother surface accounts for TRENTWELD's *longer fatigue life*—essential in hydraulic and pressure applications—*greater corrosion resistance*—vital in handling chemicals—and *less product incrustation*—which must be eliminated to prevent product contamination.

TRENTWELD Contour-Welded Tubing is promptly available in stainless and high alloy steels, titanium, zirconium, zircaloy and Hastelloy†, in sizes from  $\frac{1}{8}$ " to 40" O.D.

For full details, send for the free 48-page "Trent Tubing Manual." Write: Trent Tube Company, Box 2518, Pittsburgh, Pa.

†Trademark Haynes Stellite Co.



In **CONVENTIONAL WELDING** of tubes, gravity pulls molten metal down inside the tubing to form a bead that is difficult to remove by cold working. And cold working may lead to undercuts, focal points for fatigue cracks and corrosive attacks. Cleaning becomes difficult.

\* With **CONTOUR-WELDING** the tube is welded at the bottom. Gravity still pulls the molten metal down, but now the weld area corresponds to the contour of the tube. There's virtually no weld bulge on the inside surface. And even on the O.D., the weld seam more closely conforms to the contour of the tubing.

*stainless and high alloy pipe and tubing*  
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Crucible Steel Company of America • GENERAL OFFICES: East Troy, Wisconsin • MILLS: East Troy, Wis.; Fullerton, Calif.  
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# ON THE BALL

500,000

## TIMES A DAY BRIDGEPORT Free-Machining Brass Rod!

Because ball point pens are in everyday use, production of vital brass tips becomes astronomical along with quality control problems.



These tips — one of which is shown much enlarged — are produced at ultra-high speeds. The brass rod needed for them must be flawless in every respect. *Consistent* metallurgical composition, *precise* dimensional tolerances and *unvarying* standards of machinability — if any of these qualities vary even a fraction, production comes to a frequent and costly halt.

That's why Revere Metal Art Co., Inc., New York City, specifies Bridgeport Free-Machining Ball Point Pen Brass Rod for these inserts. It meets all requirements for precision, straightness, workability, machinability and tolerances — and, in addition, provides a surface finish that keeps finishing time and costs to a minimum.

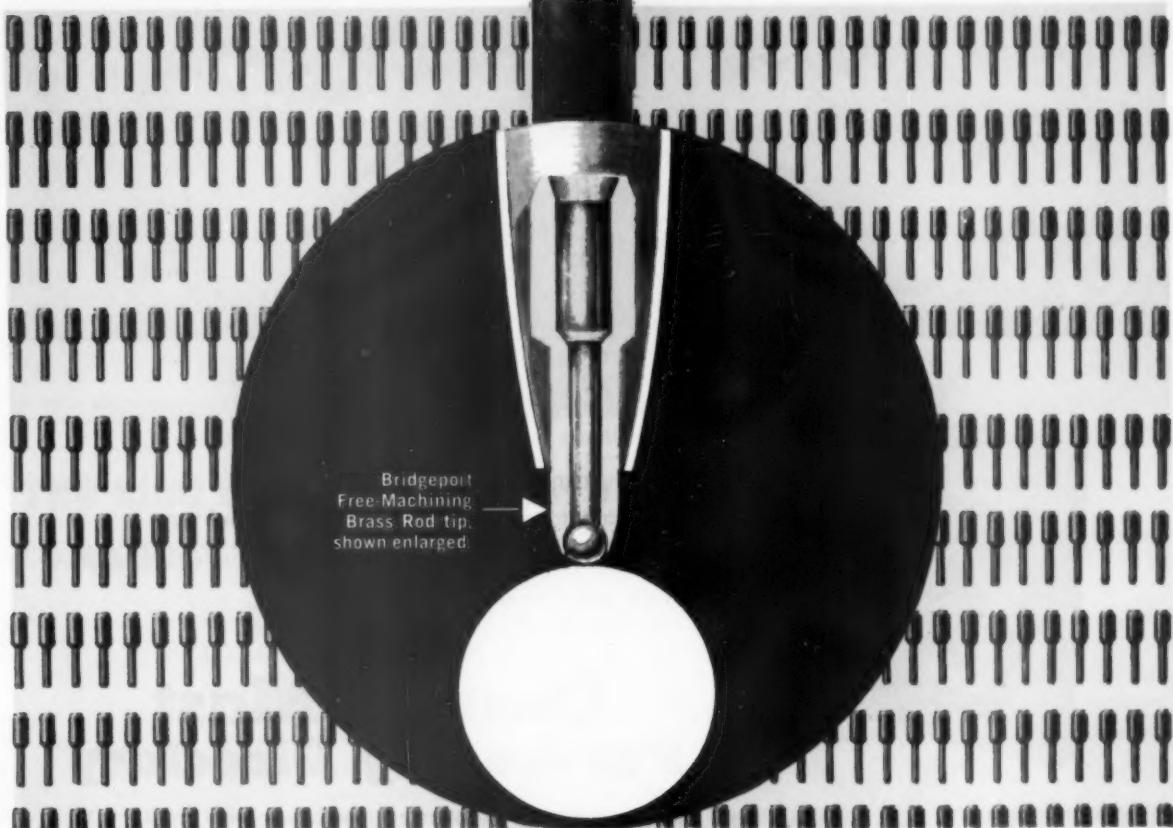
Whether you use rod, strip or tube, you can count — just as Revere does — on getting consistent quality every time you specify Bridgeport Brass Alloys. It will pay you to get the complete story. Call your nearest Bridgeport Sales Office or write us direct for a complete list of Bridgeport products — Dept. 3705.



## BRIDGEPORT BRASS COMPANY

BRIDGEPORT 2, CONNECTICUT

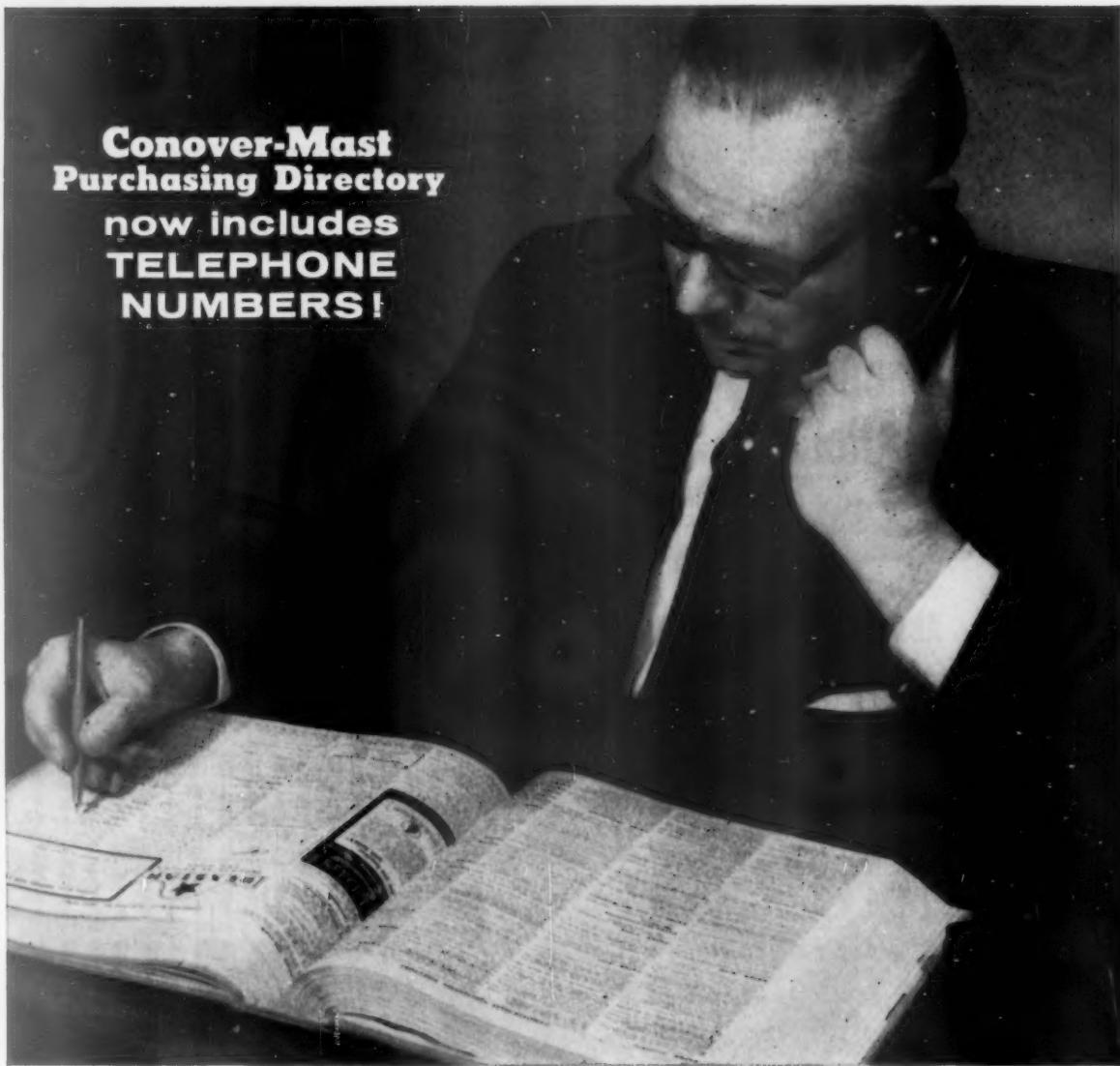
Specialists in Metals from Aluminum to Zirconium



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# NEW! Time Saving Service for Buyers

**Conover-Mast  
Purchasing Directory  
now includes  
TELEPHONE  
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Progressive Purchasing and Engineering Executives now use the telephone in buying more than ever before.

Therefore, CONOVER-MAST PURCHASING DIRECTORY has added telephone numbers of companies selling to industry.

In one convenient book you find who makes it, where they are located, and *now* their telephone number.

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PURCHASING



PHOTO BY KAREN OF STUDIO

## "The kind of service we have learned to expect from Sharon is refreshing"

—NORMAN C. McGREGOR, purchasing agent,  
Macomber Incorporated, Canton, Ohio.

"A big part of industrial purchasing is finding material suppliers willing and flexible enough to actually become a part of our production team", says Norman C. McGregor, purchasing agent for Macomber, one of the nation's foremost manufacturers of steel joists, roof decking and structural steel framing.

Shown above with Sharon salesman Lynn Houston, Mr. McGregor, on the left, inspects an order of steel joists. He concludes—"If I were to make a list of suppliers most helpful to us, I would certainly include *Sharon Steel Corporation, Sharon, Pa.*"



# SHARON Quality STEEL

WHEN  
YOU  
THINK  
OF  
BALL  
BEARINGS  
THINK  
OF  
**BCA**

Concentration on design and production of quality ball bearings for all kinds of uses over a 50-year period has taught us a lot. Like how to move fast when sudden new engineering needs arise. How to keep production flexible when everybody wants everything right now. How much worth there is—to our customers and to us—in pride of workmanship and real understanding of a supplier's duty to meet "when-promised" delivery dates. If things like this make sense to you, talk to us about your ball bearing requirements, whatever they may be. Bearings Company of America Division, Federal-Mogul-Bower Bearings, Inc., Lancaster, Pa.



BEARINGS COMPANY OF AMERICA  
DIVISION OF  
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## CHICAGO LOCKS

Rugged and Reasonable for any Application

Here are a few of the many precision-made Chicago Locks available. They're engineered for maximum security—made of carefully selected and tested metals. And they emphasize attractive design and compactness.

Whatever your needs, you're sure to find a Chicago Lock that's perfect for your purpose . . . and priced right, too.

\*One of the ACE Lock line—Maximum security locks with the exclusive round keyway.

Write today for your FREE catalog showing, in detail, the entire Chicago Lock line.

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2052 N. Racine Avenue • Chicago 14, Illinois

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PURCHASING

# MACHINE WORK & SPECIAL MACHINE BUILDING

We have large, medium and small machine tools available for machine work and the building of special machinery.

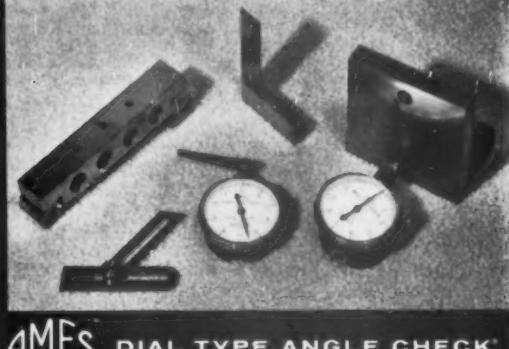
We will be pleased to receive your inquiries.

## SUN SHIP

BUILDING & DRYDOCK COMPANY  
CHESTER, PA.

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*Check Angles Quickly and Precisely with the New*



**AMES DIAL TYPE ANGLE CHECK**

ANGLE CHECK, a new dial type measuring instrument, offers you a fast, low cost, extremely accurate method for checking angular parts.

There are two ANGLE CHECKS: Model V for vertical work; Model H for horizontal. Either model takes AMES 200 Series backs. Contact blades are available in various shapes and lengths.

Ruggedly built, ANGLE CHECK saves hours in checking angles on simple and intricate shapes.

The contact blade can be set to a predetermined angle with the dial "0" under the indicator hand. A range of 5°—plus or minus—in increments of 5' can be obtained. ANGLE CHECK is accurate to 5'. Write today for complete information.

Representatives in Principal Cities



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MANUFACTURERS OF MICROMETER DIAL INDICATORS AND GAUGES

For More Information Write No. 277 on Inquiry Card—Page 32  
MAY 11, 1959



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*the exclusive*  
**FLEX-A-FOAM**  
DUST MASK

(no other product like it  
... anywhere)

Here's everything that  
management and worker alike  
could possibly want in  
a dust respirator!



1. Form-fitting design:  
Self-adjusting to any size and shape of face without pressure or irritating discomfort.
2. Attractive styling:  
Smartly designed to suit the most discriminating wearer.
3. Filtering efficiency:  
Filters non-toxic dusts 100 times smaller than the eye can see.
4. Easy-breathing comfort:  
Easier to breathe through and talk through than an ordinary pocket handkerchief.
5. Feather-like weight:  
Weighs only 1 ounce complete.
6. Simplicity and economy:  
Only 4 tough, long-wearing inter-locking parts — all washable. Pure latex filter outwears throw-away type more than 100 to 1.

No wonder FLEX-A-FOAM is the one dust respirator workers welcome and WEAR!

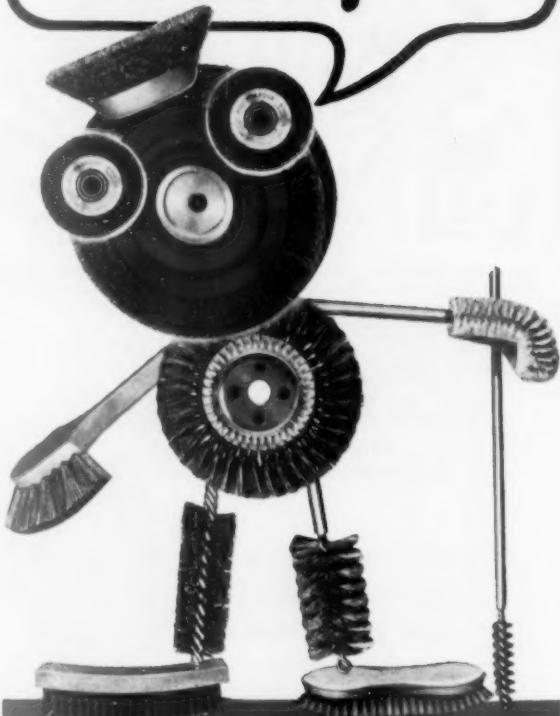
Sample only  
**\$1.45**  
postpaid  
(Industrial  
price only)

**FLEX-A-FOAM**  
DUST MASK

**FLEXO Products, Inc.** Westlake, Ohio

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**Take me to  
your buyer  
... I'm the  
leader !**



Want to bring your brush  
costs down to Earth? Pitts-  
burgh's complete line of  
power-driven and hand  
brushes... for any job, in any  
industry... can lead the way.

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Brush Div., 3221 Frederick Ave., Baltimore 29, Md.

**PG** BRUSHES • PAINTS • GLASS • SWEEPS • PLASTICS • TIRE WADS  
PITTSBURGH PLATE GLASS COMPANY

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**COLUMBIAN  
DU-MOR NYLON  
or DACRON\* SLINGS**

*Specially Woven for  
Greater Strength and Flexibility*

If the stork's traditional role in parenthood were fact instead of fiction, he would doubtless deliver babies in Columbian Du-Mor Slings... they're that safe and gentle with the product.

These slings are woven of Nylon or Dacron\*. Nylon is the strongest of synthetic fibres with some degree of stretch, Dacron being almost as strong as Nylon, but without the elasticity. The exclusive "Durable-Weave" construction gives a higher degree of strength and provides a greater degree of flexibility for ease of use and gentleness on fine finishes, painted surfaces, etc.

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Send Today for Free Illustrated Folder and Current Price List on Columbian Du-Mor Slings.

**Type NT or DT†**  
Webbing Sling with  
triangular hardware



**Type NEL or DEL†**  
Webbing Sling,  
endless type



**Type NE or DE†**  
Webbing Sling with  
eye in each end

†Available in both  
Nylon and Dacron®

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**COLUMBIAN  
ROPE COMPANY**

Auburn, "The Cordage City," New York  
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in Wheels, too...



**Gain These Advantages:**

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- **GREATER FLOTATION**—More tire surface on the ground. Spreads load suspension!
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**PRESSURE-SENSITIVE  
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101 in-plant uses  
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- Waterproof • Handles easily
- Sticks fast • Won't shrink, dry out or crack
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- Send for sample and complete information today!

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MAY 11, 1959

Danny DoALL says:

"For Complete SERVICING of  
**DEMON**® SAW BANDS  
HIGH SPEED STEEL

Call your local  
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guaranteeing new life  
for your usable Demon  
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resharpening and  
inspection . . . and their  
weld perfection assures  
3½ times longer flex life.  
Also complete stocks of  
new blades.



**IN STOCK**  
AT YOUR LOCAL DoALL STORE

**THE DoALL COMPANY**  
DES PLAINES, ILLINOIS

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For all-round deodorizing . . .



**ROUNDS**

Fragrant, laborless  
deodorant discs for urinals,  
bowls, garbage pails, lockers, closets

Deodoroma ROUNDS cost in use averages only a fraction of one cent a day. Rounds are formed under 70,000 pounds pressure: are dense and durable. Fragrance is locked in: lasts until the last particle has vaporized—there's no harsh "moth cake odor." Packed eight to the telescoping box—each Round sealed airtight—easy-to-shape Holzit wire holder in every box. For literature write to The C. B. Dolge Company, Westport, Conn.

For free sanitary survey  
of your premises ask  
your Dolge service man

**DOLGE**  
Westport, Connecticut

For More Information Write No. 283 on Inquiry Card—Page 32  
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## Employment Service

**Experience:** Six years as head buyer for plumbing heating corp., also responsible for cost accounting and job coordinator. Four years U.S. Navy as Supply Corp. Officer.

**Education:** B.S. Degree. Major marketing and business management. Studied engineering for 1½ years. Studied purchasing and production for 1 year.

**Will relocate.**

Write: Box 383.

**Experience:** Three years various purchasing experience in all levels of same for West Coast electronic mfg. co. Knowledge of mil-specs, govt. property control, production control, scheduling, cost, follow-up & clerical. Know the national suppliers and reps.

**Education:** Two years pre-engineering. Presently attending college for degree in purchasing & business administration.

**Will relocate.**

Write: Box 384

**Experience:** Eighteen years diversified experience purchasing agent in petroleum, rubber, heavy machinery, electronics. Experienced in administering government sub-contracts and construction contracts. Value analysis experience. Pioneer in IDP purchasing procedures. Supervised inventory control, warehousing and traffic.

**Education:** B.S. degree in business administration. Two years business law.

**Will relocate.**

Write: Box 385

**Experience:** Three years as purchasing agent—purchasing machinery, steel, production and non-production items and office machines and supplies. Handle inventory control, traffic and co-ordinate purchasing function with other departments as well as designing the forms used. Industrial—ass't plant superintendent, office manager and accounting—experience in interviewing and hiring of people for both production and administrative positions. Banking—Ass't Cashier. Retail—Buyer and salesman of furniture and appliance. **Education:** Accounting, purchasing and management—Member of N.A.P.A.

Write: Box 386.

**Experience:** Seven years as purchasing agent in industrial plant (uranium processing). Responsible for all procurement and materials management. Developed sources of supply for semi-isolated area. Developed modern purchasing-receiving system. Previously held supervisory position in production.

**Education:** One year college, one year extension course—chemical engineering.

**Will relocate.**

Write: Box 387.

**Experience:** Six years in purchasing field, 1½ as assistant buyer & 4½ as purchasing agent. Purchase various chemical raw materials, MRO supplies, office supplies & equipment & all types of packaging supplies. Experienced in contracts, blanket orders, expediting, inventory, exporting. Total purchases \$2½ million yearly.

**Education:** Completed 2 years of college in business administration.

**Will relocate.**

Write: Box 388.

**Experience:** Eleven years' diversified experience metal industry, productive and non-productive buying, including machine tools, presses, tooling, castings and assembly parts. Present field industrial ovens and special machinery.

**Education:** Three years' college, two years' management training program. Prefer Detroit area.

Write: Box 389.

**Listings in this department are offered without charge.** Both purchasing department personnel interested in changing jobs and employers in search of replacements or additions to their departments may take advantage of this service. When writing, specify whether you want the applicant's form or the employer's form. Address all correspondence—whether for forms, or in answer to an employment advertisement, to: Box No., Employment Service Department, PURCHASING Magazine, 205 East 42nd Street, New York 17, New York.

**Experience:** Twelve years purchasing experience as expeditor, buyer and PA in electronic field including television and electronic equipment for aircraft. Presently employed by manufacturer of control boxes and cable assemblies for aircraft and ground control equipment. Have purchased all types of electronic components, sheet steel, metal stampings and packaging material for a multiple plant operation. Desire position with a progressive company that can offer the opportunity of a worthwhile career.

**Education:** Course—Traffic Management.

**Will relocate.**

Write: Box 390.

**Experience:** Purchasing oil refinery, equipment—office mgr. engr.—purchasing & expediting equipment construction chemical pts. Also in personnel, employment & relations. Accounting, payroll, shipping, storeroom foundation for above mentioned positions. 20 yrs.

**Education:** Mechanical college—2 yrs. mechanical—Engineering—Nite School—accounting, management supervision, personnel relations.

**Require Calif. climate, per medical authorities, for son's health.**

Write: Box 391.

**Experience:** Twenty seven years purchasing agent for mfr. of textile dyeing, drying and special machinery. Supervised purchasing all materials, maintenance and operating supplies. 4 yrs. U. S. Army Engineers Procurement & Supply Officer. 2½ yrs. buyer of all materials, equipment, maintenance and operating supplies for missiles & space laboratory.

**Education:** Attended U. S. Army Engineers School of Procurement & Supplies. Purchasing and storing course conducted by Purchasing Agents Association.

**Will relocate.**

Write: Box 392.

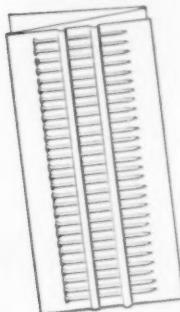
**Experience:** Eleven years purchasing—7 years military procurement—at management level. Emphasis in electronics field with considerable attention to sub-contracts. Knowledge of Military Procurement regulations. Read blueprints. Strong negotiator. Good organizer. Member National Association of Purchasing Agents.

**Education:** College Graduate. Specialized training in the following fields, management, radio theory and operations, government contracts, blueprint reading and shop practices, education.

**Will relocate.**

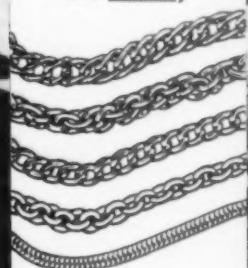
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need stiffness



Pin wire needs stiffness,  
but it must be easily  
worked to form the heads.

Wire for these  
**CHAINS** requires  
a fine Surface  
and Ductility



Jewelry chains are made  
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beautiful finish and is  
easy to work.

We can match your  
production requirements  
with Chase® wire!



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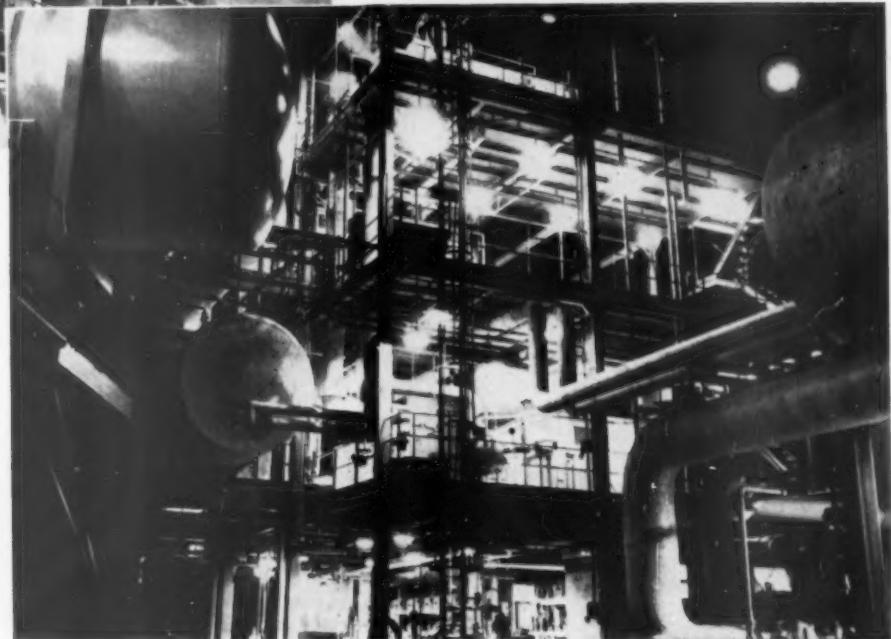


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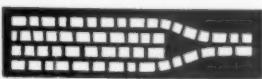


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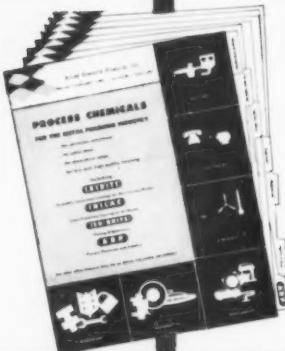
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